CDX-C680/C780

SERVICE MANUAL

US Model

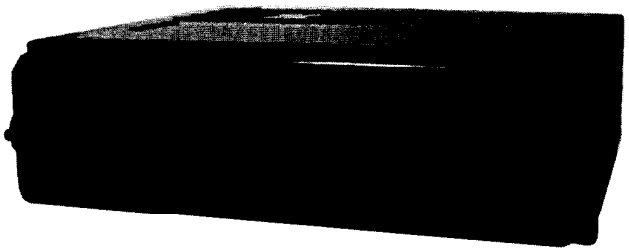


Photo : CDX-C680

Model Name Using Similar Mechanism	NEW
CD Drive Mechanism Type	MG-363S-121
Optical Pick-up Name	KSS-520A

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

17 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1 % total harmonic distortion.

Other specifications

CD player section

System	Compact disc digital audio system
Signal-to-noise ratio	99 dB
Frequency response	10 - 20,000 Hz
Wow and flutter	Below measurable limit
Laser Diode Properties	
Material	GaAlAs
Wavelength	780 nm
Emission Duration	Continuous
Laser output power	Less than 44.6 μW*

** This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.*

Tuner section

FM

Tuning range	87.5 - 107.9 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz 50 dB at 200 kHz
Signal-to-noise ratio	62 dB (stereo), 65 dB (mono)
Harmonic distortion at 1 kHz	0.9% (stereo), 0.5% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 - 15,000 Hz
Capture ratio	2 dB

AM

Tuning range	530 - 1,710 kHz
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	30 μV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 - 8 ohms
Maximum power output	45 W × 4 (at 4 ohms)

– Continued on next page –

FM/AM COMPACT DISC PLAYER

MICROFILM

SONY®

General

Outputs	EQ output (C780) Line outputs (3) Power antenna relay control lead Power amplifier control lead Telephone ATT control lead Illumination control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 178 × 50 × 182 mm (7 1/8 × 2 × 7 1/4 in.) (w/h/d)
Mounting dimension	Approx. 182 × 53 × 163 mm (7 1/4 × 2 1/8 × 6 1/2 in.) (w/h/d)
Mass	Approx. 1.4 kg (3 lb. 1 oz.)
Supplied accessories	Parts for installation and connections (1 set) Front panel case (1)

Design and specifications are subject to change without notice

SERVICE NOTE

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

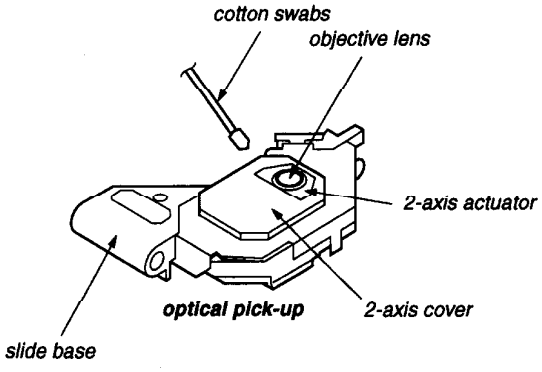
NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

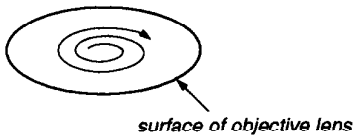
NOTES ON PICK-UP FLEXIBLE BOARD

The pick-up flexible board in this set is secured to the optical pick-up with an adhesive tape. Once the tape is removed, an adhering force becomes weak, and it cannot be reused.
Therefore, if the optical pick-up is replaced, replace also the pick-up flexible board with a new one.

NOTES ON CLEANING THE OBJECTIVE LENS



Apply CD lens cleaner B-4 (Part No.:J-2501-000-A) to cotton swabs (narrow type) (Part No.:J-2501-023-A) to be lightly wet. Use a force (about 5 g (0.18 oz)) to make the objective lens in contact with the bottom lightly, and clean the lens by spirals as following below. Replace the cotton swab and repeat this cleaning two or three times.



Notes:

Do not force to push the objective lens. Otherwise, the plate spring supporting the objective lens will be bent, causing a deteriorated RF waveform.
Never touch anything other than the objective lens. Otherwise, a significant deterioration occurs in the RF waveform.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

1. GENERAL

Location of Controls 4
Getting Started 4
Setting the Clock 5
CD Player 5
Radio 8
Other Functions 9
CD/MD Unit 11
DSP 14
TV/Video 17
Connections 19

2. DISASSEMBLY

2-1. Cover 21
2-2. Front Panel Assy 21
2-3. Mechanism Block 22
2-4. Sub Panel Assy 22
2-5. Main Board 23
2-6. Heat Sink 23
2-7. Chassis (T) Sub Assy 24
2-8. Lever Assy 24
2-9. Servo Board 25
2-10. Roller Assy 25
2-11. Chassis (OP) (O/S) Assy 26
2-12. Optical Pick-up Block 26

3. ELECTRICAL ADJUSTMENTS

Tuner Section 27

4. DIAGRAMS

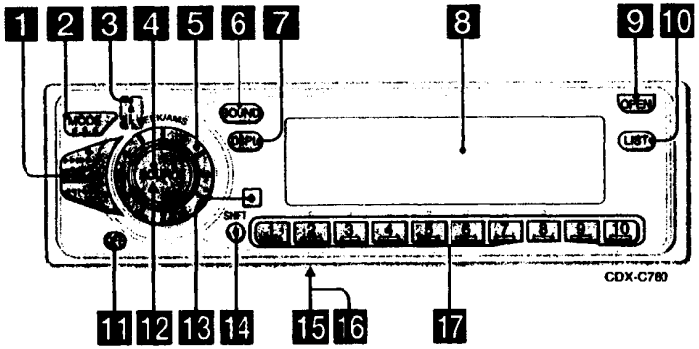
4-1. IC Pin Descriptions 30
4-2. Circuit Boards Location 36
4-3. Block Diagram –CD Section– 37
4-4. Block Diagram –Display Section– 39
4-5. Block Diagram –Tuner Section– 41
4-6. Printed Wiring Boards –CD Mechanism Section– 43
4-7. Schematic Diagram –CD Mechanism Section– 47
4-8. Schematic Diagram –Main Section– 52
4-9. Printed Wiring Boards –Main Section– 57
4-10. Printed Wiring Board –Display Section– 62
4-11. Schematic Diagram –Display Section– 64

5. EXPLODED VIEWS

5-1. Chassis Section 71
5-2. Front Panel Section 72
5-3. CD Mechanism Section (1) 73
5-4. CD Mechanism Section (2) 74
5-5. CD Mechanism Section (3) 75

6. ELECTRICAL PARTS LIST 76

Location of controls



EN

Refer to the pages for details.

1 **SEEK/AMS (seek/Automatic Music Sensor/manual search) control** 9, 10, 12, 13, 14, 20, 21, 22, 25, 31

2 **MODE (band/unit select) button** 13, 19, 21, 24, 31

3 **≜ (eject) button (located on the front of the unit hidden by the front panel)** 8

4 **SOURCE (source select) button** 8, 13, 18, 19, 21, 24, 26, 27, 29, 30, 31, 33

5 **Dial (volume/subwoofer volume/bass/treble/left-right/rear-front control)** 7, 15, 17, 23, 24, 26, 27, 28, 29, 30

6 **SOUND button** 17, 26, 27, 28, 29, 30

7 **DSPL (display mode change) button** 8, 14, 15, 19, 24, 25

8 **Display window**

9 **OPEN button** 6, 8, 34

10 **LIST button**
Station Memo 14, 15, 32
Disc Memo 23, 24
List-up 15, 25
DSP Custom File 27

11 **OFF button** 6, 8

12 **Reset button (located on the front side of the unit behind by the front panel)** 6

13 **Receptor for the optional wireless remote**

14 **SHIFT button**
PLAY MODE 9, 10, 11, 12, 13, 14, 20, 21, 22, 23, 25, 26, 27, 31
REP 10, 20
SET UP 7, 8, 18, 19, 30
SHUF 10, 20

15 **POWER SELECT switch (located on the bottom of the unit)**
See "POWER SELECT Switch" in the Installation/Connections manual.

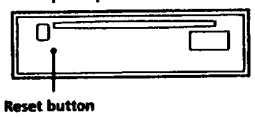
16 **LINE-OUT/IN SELECT switch (located on the bottom of the unit)**
See "LINE-OUT/IN SELECT switch" in the Installation/Connections manual.

17 **During radio reception:**
Number buttons 13
During CD/MD playback:
Direct disc selection buttons 20, 21
During TV reception:
Number buttons 31

Getting Started

Resetting the unit

Before operating the unit for the first time or after replacing the car battery, you must reset the unit.
Press the reset button with a pointed object, such as a ballpoint pen.



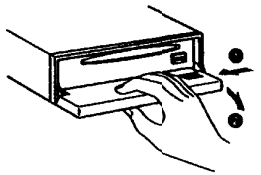
Notes
- *Pressing the reset button will erase the clock and some memorized functions.*
- *When you connect the power supply cord to the unit or reset the unit, wait for about 10 seconds before you insert a disc. If you insert a disc within these 10 seconds, the unit will not be reset, and you will have to press the reset button again.*

Detaching the front panel

You can detach the front panel of this unit to prevent the unit from being stolen.

1 **Press (OFF).**

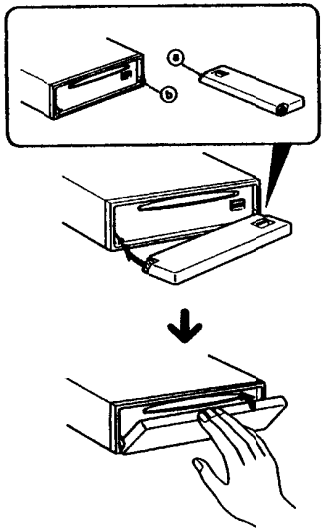
2 **Press (OPEN) to open the front panel, then slide the front panel to the left side, and pull out the right side of the front panel.**



Notes
- *Do not put anything on the inner surface of the front panel.*
- *Be sure not to drop the panel when detaching it from the unit.*
- *If you detach the panel while the unit is still on, the power will turn off automatically to prevent the speakers from being damaged.*
- *When you carry the front panel with you, put it in the supplied front panel case.*

Attaching the front panel

Place the hole ⓐ in the front panel onto the spindle ⓑ on the unit as illustrated, then push the left side in.



Notes
- *Be sure not to attach the front panel upside down.*
- *Do not press the front panel hard against the unit when attaching it. Press it lightly against the unit.*
- *Do not press hard or put excessive pressure on the display windows of the front panel.*
- *Do not expose the front panel to direct sunlight, heat sources such as hot air ducts, and do not leave it in a humid place. Never leave it on the dashboard of a car parked in direct sunlight where there may be a considerable rise in temperature.*

Caution alarm

If you turn the ignition key switch to the OFF position without removing the front panel, the caution alarm will beep for a few seconds (only when the POWER SELECT switch is set to the Ⓐ position).

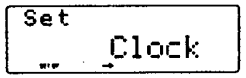
This section extracted from CDX-C780's instruction manual.

Setting the clock

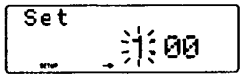
The clock uses a 12-hour digital indication.

Example: Set the clock to 10:08

1 Press (SHIFT), then press (3) (SET UP).



❶ Press (5) (→).



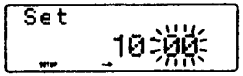
The hour digit flashes.

❷ Set the hour.

to go backward

to go forward

❸ Press (5) (→).

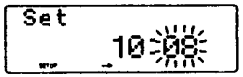


The minute digits flash.

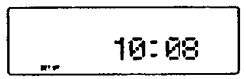
❹ Set the minute.

to go backward

to go forward



2 Press (SHIFT).



The clock starts.

3 Press (SHIFT).

After the mode setting is complete, the display goes back to normal playback mode.

Note

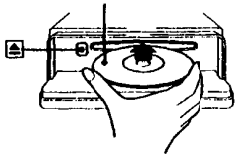
If the POWER SELECT switch on the bottom of the unit is set to the ❶ position, turn the power on first, then set the clock.

CD Player

Listening to a CD

1 Press (OPEN) and insert the CD.

Labelled side up

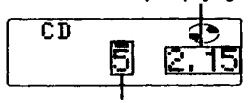


2 Close the front panel.

Playback starts automatically.

If a CD is already inserted, press (SOURCE) repeatedly until "CD" appears.

Elapsed playing time



Track number

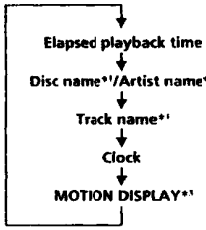
Note

To play back an 8 cm (3 in.) CD, use the optional Sony compact disc single adapter (CSA-8).

To	Press
Stop playback	(OFF)
Eject the CD	(OPEN) then ⏏

Changing the displayed item

Each time you press (DSPL), the item changes as follows:



*1 *If you inserted a non-CD TEXT disc, "NO D.Name" or "NO T.Name" appears in the display.*

*2 *If you play a CD TEXT disc, the artist name appears in the display after the disc name. (Only for CD TEXT discs with the artist name.)*

*3 *All the items above are scrolled in the display one by one in order.*

You can label CD and CD TEXT discs with a personalized name using the disc memo function, refer to "Labeling a CD" (page 23). However, if you use personalized labels, they will always take priority over the original CD TEXT information when such information is displayed.

Tip

If the name of the CD TEXT disc is too long, you can scroll it across the display by pressing (SHIFT), then (2) (←).

Automatically scrolling a disc name — Auto Scroll

If the disc name/artist name or track name on a CD TEXT disc exceeds 10 characters and the Auto Scroll function is on, automatically scrolls on the display as follows:

- *The disc name appears when the disc has changed (if the disc name is selected).*
- *The track name appears when the track has changed (if the track name is selected).*

If you press (DSPL) to change the display item, the disc or track name of the CD TEXT disc is scrolled automatically whether you set the function on or off.

1 During playback, press (SHIFT).

2 Press (3) (SET UP) repeatedly until "A.Scrl" appears.

3 Press (5) (→) to select "A.Scl on."

4 Press (SHIFT)

To cancel Auto Scroll, select "A.Scl off" in step 2 above.

Note
For some CD TEXT discs with extremely many characters, the following cases may happen:
— Some of the characters are not displayed.
— Auto Scroll does not work.

Locating a specific track
— Automatic Music Sensor (AMS)

During playback, push the SEEK/AMS control up or down momentarily.

Locating a specific point in a track
— Manual Search

During playback, push the SEEK/AMS control up or down and hold. Release when you have found the desired point.

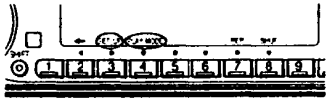
Note
If "⊏⊏⊏⊏" or "⌐⌐⌐⌐" appears in the display, that means you have reached the beginning or the end of the disc and you cannot go any further.

Playing a CD in various modes

You can play CDs in various modes:
- Intro (Intro Scan) lets you play the first 10 seconds of all the tracks.
- Repeat (Repeat Play) repeats the current track.
- Shuf (Shuffle Play) plays all the tracks in random order.

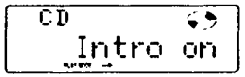
Searching for the desired track
— Intro scan

1 **Press (SHIFT).**
Every time you press (SHIFT), only the items you can select light up.



2 **Press ④ (PLAY MODE) repeatedly until "Intro" appears.**
Each time you press ④ (PLAY MODE), the item changes as follows:
Intro ⟷ PGM

3 **Press ⑤ (→) to select "Intro on."**



Intro Scan starts.

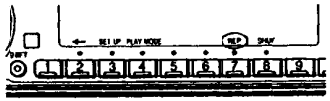
4 **Press (SHIFT).**

To go back to normal playback mode, select "Intro off" in step 3 above.

Playing tracks repeatedly
— Repeat Play

1 **During playback, press (SHIFT).**

2 **Press ⑦ (REP) repeatedly until "Repeat 1" appears.**



Repeat Play starts.

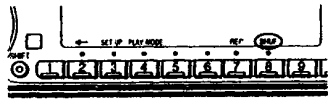
3 **Press (SHIFT).**

To go back to normal playback mode, select "Repeat off" in step 2 above.

Playing tracks in random order
— Shuffle Play

1 **During playback, press (SHIFT).**

2 **Press ⑧ (SHUF) repeatedly until "Shuf 1" appears.**



Shuffle Play starts.

3 **Press (SHIFT).**

To go back to normal playback mode, select "Shuf off" in step 2 above.

Creating a programme
— CD Programme Memory

You can play the tracks in the order you want by making your own programme. You can make two programmes: Programme 1 and Programme 2. You can select up to 12 tracks for each programme. You can store the programmes in memory.

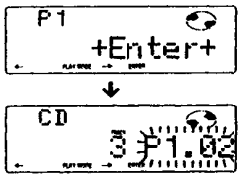
1 **Press (SHIFT), then press ④ (PLAY MODE) for two seconds.**

"P 1" shows Programme 1 is selected.

To select Programme 2, press ⑤ (→) repeatedly until "P 2" appears.

2 **Push the SEEK/AMS control up or down to select the track you want.**

3 **Press ⑥ (ENTER) momentarily.**



4 **To continue entering tracks, repeat steps 2 and 3.**

5 **When you finish selecting tracks, press ④ (PLAY MODE) for two seconds.**

6 **Press (SHIFT).**

Notes
- *"*Wait*" appears in the display while the unit is reading the data.*
- *"*Mem Full*" appears in the display when you try to enter more than 12 tracks into a programme.*

Playing the stored programme

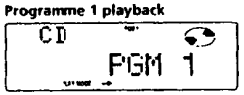
You can select:
- PGM 1 to play Programme 1.
- PGM 2 to play Programme 2.
- PGM 1+2 to play Programmes 1 and 2.

1 Press (SHIFT).

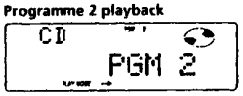
2 Press ④ (PLAY MODE) repeatedly until "PGM" appears.

3 Press ⑤ (→) repeatedly until the desired programme appears.

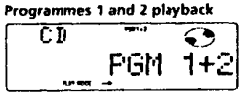
Programme 1 playback



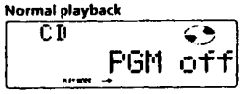
Programme 2 playback



Programmes 1 and 2 playback



Normal playback



Programme Play starts.

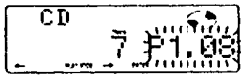
4 Press (SHIFT).

To go back to normal playback mode, select "PGM off" in step 3 above.

Note
"Not ready" appears in the display if no track is stored in the programme.

Erasing an entire programme

1 Press (SHIFT), then press ④ (PLAY MODE) for two seconds.

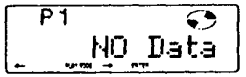


"P 1" shows Programme 1 is selected.

2 Press ② (←) repeatedly until "DEL" appears.

To delete Programme 2, press ⑤ (→) repeatedly until "PGM 2" appears.

3 Press ⑥ (ENTER) for two seconds.



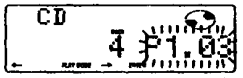
The entire programme is erased.

4 When you finish erasing programmes, press ④ (PLAY MODE) for two seconds.

5 Press (SHIFT).

Adding tracks to a programme

1 Press (SHIFT), then press ① (PLAY MODE) for two seconds.

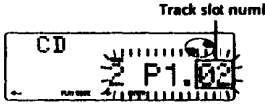


"P 1" shows Programme 1 is selected.

To select Programme 2, press ⑤ (→) repeatedly until "P 2" appears.

2 Press ② (←) or ⑤ (→) to select the track slot number where you want to insert a track.

Track slot number



3 Push the SEEK/AMS control up or down to select the track you want to insert.

4 Press ⑥ (ENTER) momentarily to enter the track.
The current track in that slot number and the succeeding tracks shift down.

5 To continue inserting tracks, repeat steps 2 through 4.

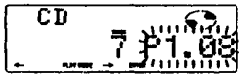
Note
*Once all 12 slots have been filled, "*Mem full*" appears in the display, and you cannot insert tracks.*

6 When you finish inserting tracks, press ④ (PLAY MODE) for two seconds.

7 Press (SHIFT).

Erasing tracks in a programme

1 Press (SHIFT), then press ④ (PLAY MODE) for two seconds.

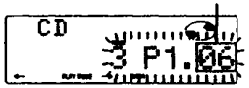


"P 1" shows Programme 1 is selected.

To select Programme 2, press ⑤ (→) repeatedly until "P 2" appears.

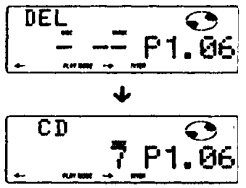
2 Press ② (←) or ⑤ (→) to select the track you want to erase.

Track slot number



The track currently registered in slot 6 of Programme 1.

3 Press ⑥ (ENTER) for two seconds.
When you erase a track from a slot number, the succeeding tracks shift up to fill the gap.



4 To continue erasing tracks, repeat steps 2 and 3.

5 When you finish erasing tracks, press ④ (PLAY MODE) for two seconds.

6 Press (SHIFT).

Radio

Memorising stations automatically

— Best Tuning Memory (BTM)

The unit selects the stations with the strongest signals and memorises them in the order of their frequencies. You can store up to 10 stations on each band (FM1, FM2 and AM).

Caution
When tuning in stations while driving, use Best Tuning Memory to prevent accidents.

1 Press (SOURCE) repeatedly to select the tuner.
Each time you press (SOURCE), the source changes as follows:
CD ⟷ TUNER

2 Press (MODE) repeatedly to select the band.
Each time you press (MODE), the band changes as follows:
→ FM1 → FM2 → AM →

3 Press (SHIFT), then press (4) (PLAY MODE) repeatedly until "B.T.M" appears.

4 Press (5) (→).
The unit stores stations in the order of their frequencies on the number buttons.
A beep sound and the setting is stored.

5 Press (SHIFT).

Notes
- *The unit does not store stations with weak signals. If only a few stations are received, some number buttons will retain heir former setting.*
- *When a number is indicated in the display, the unit starts storing stations from the one currently displayed.*

Memorising only the desired stations

You can store up to 10 stations on each band (20 for FM1 and FM2, 10 for AM) in the order of your choice.

1 Press (SOURCE) repeatedly to select the tuner.

2 Press (MODE) repeatedly to select the band (FM1, FM2 or AM).

3 Push the SEEK/AMS control up or down to tune in the station you want to store on the number button.

4 Press and hold the desired number button ((1) to (10)) until "MEM" appears.
The number button indication appears in the display.

Note
If you try to store another station on the same number button, the previously stored station will be erased.

Receiving the memorised stations

1 Press (SOURCE) repeatedly to select the tuner.

2 Press (MODE) repeatedly to select the band (FM1, FM2 or AM).

3 Press the number button ((1) to (10)) momentarily where the desired station is stored.

If you cannot tune in a preset station

Push the SEEK/AMS control up or down momentarily to search for the station (automatic tuning).
Scanning stops when the unit receives a station. Push the SEEK / AMS control up or down repeatedly until the desired station is received.

Note
If the automatic tuning stops too frequently, press (SHIFT), then press (4) (PLAY MODE) repeatedly until "Local" (local seek mode) is displayed. Then press (5) (→) to select "Local on." Press (SHIFT). Only the stations with relatively strong signals will be tuned in.

Tip
If you know the frequency of the station you want to listen to push the SEEK/AMS control up or down and hold until the desired frequency appears (manual tuning).

If FM stereo reception is poor
—Monaural Mode

1 Press (SHIFT), then press (4) (PLAY MODE) repeatedly until "Mono" appears.

2 Press (5) (→) repeatedly until "Mono on" appears.
The sound improves, but becomes monaural ("ST" disappears).

3 Press (SHIFT).

To go back to normal mode, select "Mono off" in step 2 above.

If interference occurs during FM reception

If there is interference from neighboring stations, follow the steps below and select "Narrow". If interference is not a problem, select "Wide" to maximize signal reception and improve sound quality or "IF Auto "to switch between "Narrow" and "Wide" automatically.

1 Press (SHIFT) during FM reception.

2 Press (4) (PLAY MODE) repeatedly until "IF Auto" appears.

3 Press (5) (→) repeatedly to select desired setting
→ IF Auto → Wide →
Narrow ←

4 Press (SHIFT).

Changing the displayed items

Each time you press (DSPL), the item changes as follows:
→ Frequency → Clock →
MOTION DISPLAY* ←

** All the items above are scrolled in the display one by one in order.*

Storing the station names

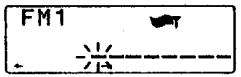
—Station Memo

You can assign a name to each radio station and store it in memory. The name of the current station appears in the display. You can store up to eight characters for each station.

Storing the station names

1 Tune in a station whose name you want to store.

2 Press (LIST) for two seconds.

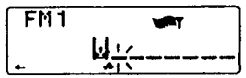


3 Enter the characters.

❶ Rotate the dial clockwise to select the desired characters.
(A → B → C → ··· Z → 0 → 1 → 2 → ··· 9 → + → − → * → / → \ → > → < → . → _)

If you rotate the dial counterclockwise, the characters appear in the reverse order.
If you want to put a blank space between characters, select "_" (underbar).

❷ Press (5) (→) after locating the desired character.
The flashing cursor moves to the next space.



If you press (2) (←), the flashing cursor moves to the left.

❸ Repeat steps ❶ and ❷ to enter the entire name.

4 To return to normal radio reception, press (LIST) for two seconds.

Tip
To erase/correct a name, enter "_" (underbar) for each character.

Displaying the station name

Press (DSPL) during radio reception.

Each time you press (DSPL), the item changes as follows:

Station name*1 → Frequency → Clock → MOTION DISPLAY*2 → Station name*1

*1 *If the station name is not stored, "NO Name" appears in the display for one second.*
*2 *All the items above are scrolled in the display one by one in order.*

Erasing the station name

1 Tune in any station and press (LIST) for two seconds.

2 Press (DSPL) for two seconds.
The station name appears in the display.

3 Rotate the dial to select the name you want to erase.

4 Press (6) (ENTER) for two seconds.
The name is erased.
Repeat steps 3 and 4 if you want to erase other names.

5 Press (LIST) for two seconds.
The unit returns to normal radio reception mode.

Locating a station by name — List-up

1 Press (LIST) momentarily.
The name assigned to the current station appears in the display.

2 Press (LIST) repeatedly until you find the desired station.

3 Press (6) (ENTER) to tune in the desired station.

Note
After the station name or frequency has been displayed for five seconds, the display goes back to normal mode. To turn off the display, press (DSPL).

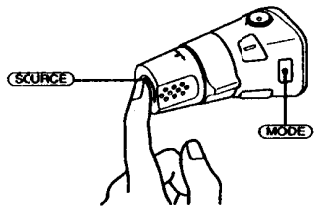
Other Functions

You can connect an optional rotary commander (RM-X4S) with this unit.

Using the rotary commander

The rotary commander works by pressing buttons and/or rotating controls.
You can control an optional CD or MD unit with the rotary commander.

By pressing buttons (the SOURCE and MODE buttons)



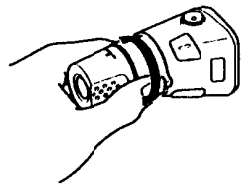
Each time you press (SOURCE), the source changes as follows:
TUNER → CD → MD → TV*

* *When an optional TV tuner or Video is connected.*

Pressing (MODE) changes the operation in the following ways:
- Tuner: FM1 → FM2 → AM
- CD unit: CD1 → CD2 → ...
- MD unit: MD1 → MD2 → ...
- TV/Video: TV → Video1 → Video2 → ...

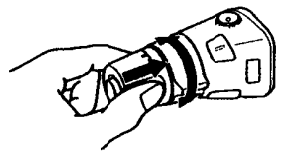
Tip
When the POWER SELECT switch is set to position ❸, you can turn on this unit by pressing (SOURCE) on the rotary commander.

By rotating the control (the SEEK/AMS control)



Rotate the control momentarily and release it to:
- Locate a specific track on a disc. Rotate and hold the control until you locate the specific point in a track, then release it to start playback.
- Tune in stations automatically. Rotate and hold the control to tune in a specific station.

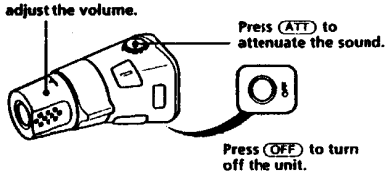
By pushing in and rotating the control (the PRESET/DISC control)

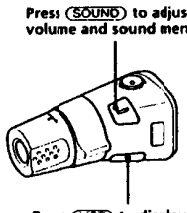


Push in and rotate the control to:
- Receive the stations memorised on the number buttons.
- Change the disc.

Other operations

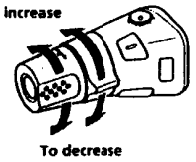
Rotate the VOL control to adjust the volume.



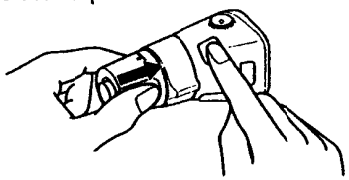


Changing the operative direction

The operative direction of controls is factory-set as in the illustration below.



If you need to mount the rotary commander on the right side of the steering column, you can reverse the operative direction.



Press (SOUND) for two seconds while pushing the VOL control.

Tip
You can control the operative direction of controls with the unit (page 18).

Adjusting the sound characteristics

You can adjust the bass, treble, balance and fader.
Each source can store the bass and treble levels respectively.

1 Select the item you want to adjust by pressing (SOUND) repeatedly.

VOL (volume) → SUB (subwoofer volume) → BAS (bass) → TRE (treble) → BAL (left-right) → FAD (rear-front)

2 Adjust the selected item by rotating the dial.
Adjust within three seconds after selecting the item. (After three seconds, the dial functions as the volume control.)

Attenuating the sound

Press (ATT) on the rotary commander or wireless remote.
"ATT on" flashes momentarily.

To restore the previous volume level, press (ATT) again.

Tip
The unit decreases the volume automatically when a telephone call comes in (Telephone ATT function).

EN

Other Functions

EN

Changing the sound and display settings

You can set:
- Clock (page 7).
- D.Info (Dual Information) to display the clock and the play mode at the same time (ON) or to display the information alternately (OFF).
- Amber/Green to change the illumination colour to amber or green.
- Dimmer to change the brightness of the display.
  — Select "Auto" to dim the display only when you turn the lights on.
  — Select "on" to dim the display.
- Contrast to adjust the contrast if the indications in the display are not recognizable because of the unit's installed position.
- Beep to turn on or off the beeps.
- RM (Rotary Commander) to change the operative direction of the controls of the rotary commander.
  — Select "norm" to use the rotary commander as the factory-set position.
  — Select "rev" when you mount the rotary commander on the right side of the steering column.
- Loud (Loudness) to enjoy bass and treble even at low volume. The bass and treble will be reinforced.
- LPF (Low Pass Filter)
- A.Scrl (Auto Scroll) (page 8, 19).

1 Press (SHIFT).

2 Press (3) (SET UP) repeatedly until the desired item appears.

Each time you press (3) (SET UP), the item changes as follows:

Clock → D.Info* → Amber/Green → Dimmer → Contrast → Beep → RM → Loud* → LPF* → A.Scrl*

** When you have not tune the station or there is no CD/MD being played, these items will not appear.*

Note
The displayed item will differ depending on the source.

3 Press (5) (→) to select the desired setting (for example: on or off).
For the "Contrast" setting, pressing (5) (→) makes the contrast higher, and pressing (2) (←) makes the contrast lower.

4 Press (SHIFT).
After the mode setting is complete, the display goes back to normal playback mode.

Adjusting the frequency of the subwoofer(s)

To match the characteristics of the connected subwoofer(s), you can cut out the unwanted high and middle frequency signals entering the subwoofer(s). By setting the cut-off frequency, the subwoofer(s) will output only low frequency signals so you can get a clearer sound image.

1 Press (SOURCE) to select a source (radio, CD or MD).

2 Press (SHIFT), then press (3) (SET UP) repeatedly until "LPF" appears.

3 Press (5) (→) or (2) (←) repeatedly to select desired setting.

Each time you press (5) (→) or (2) (←), the cut-off frequency in the display changes as follows:

LPF off ⟷ LPF 80 Hz ⟷ LPF 120 Hz

4 Press (SHIFT).
When the frequency setting is complete, the display goes back to the normal playback mode.

With Optional Equipment

CD/MD Unit

You can control up to 7 CD and MD units with this unit.
If you connect an optional CD unit with the CD TEXT function, the CD TEXT information will appear in the display when you play back a CD TEXT disc.

Playing a CD or MD

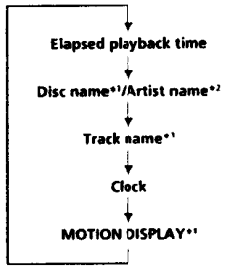
1 Press (SOURCE) repeatedly to select the CD or MD.

2 Press (MODE) until the desired unit appears.
CD/MD playback starts.

When a CD/MD unit is connected, all the tracks play from the beginning.

Changing the displayed item

Each time you press (DSPL) during CD, CD TEXT or MD playback, the item changes as follows:



*1 *If you have not labeled the disc or there is no disc name prerecorded on the MD, "NO D.Name" appears in the display.*
*2 *If you play a CD TEXT disc, the artist name appears in the display after the disc name. (Only for CD TEXT discs with the artist name.)*
*3 *If the track name of a CD TEXT disc or MD is not prerecorded, "NO T.Name" appears in the display.*
*4 *All the items above are scrolled in the display one by one in order.*

You can label CD and CD TEXT discs with a personalized name using the disc memo function, refer to "Labeling a CD" (page 23). However, if you use personalized labels, they will always take priority over the original CD TEXT information when such information is displayed.

Tip
If the name of the MD or CD TEXT disc is too long, you can scroll it across the display by pressing (SHIFT), then (2) (←).

Automatically scrolling a disc name — Auto Scroll

If the disc name/artist name or track name on a CD TEXT disc or MD exceeds 10 characters and the Auto Scroll function is on, automatically scrolls on the display as follows:
- *The disc name appears when the disc has changed (if the disc name is selected).*
- *The track name appears when the track has changed (if the track name is selected).*

If you press (DSPL) to change the display item, the disc or track name of the MD or CD TEXT disc is scrolled automatically whether you set the function on or off.

1 During playback, press (SHIFT).

2 Press (3) (SET UP) repeatedly until "A.Scrl" appears.

3 Press (5) (→) to select "A.Scrl on."

4 Press (SHIFT)

To cancel Auto Scroll, select "A.Scrl off" in step 2 above.

Note
For some CD TEXT discs with extremely many characters, the following cases may happen:
— Some of the characters are not displayed.
— Auto Scroll does not work.

Locating a specific track — Automatic Music Sensor (AMS)

During playback, push the SEEK/AMS control up or down once for each track you want to skip.

To locate succeeding tracks
To locate preceding tracks

Locating a specific point in a track — Manual Search

During playback, push the SEEK/AMS control up or down and hold. Release when you have found the desired point.

To search forward
To search backward

Locating a disc by disc number — Direct Disc Selection

Press the number button that corresponds with the desired disc number.
The desired disc in the current unit begins playback.

Scanning the tracks

— Intro Scan

You can play the first 10 seconds of all the tracks on the current disc.

1 During playback, press (SHIFT), then press (4) (PLAY MODE) repeatedly until "Intro" appears.

2 Press (5) (→) to select "Intro on."
Intro Scan starts.

3 Press (SHIFT).

To go back to normal playback mode, select "Intro off" in step 2 above.

Playing tracks repeatedly — Repeat Play

You can select:
- Repeat 1 to repeat a track.
- Repeat 2 to repeat a disc.

1 During playback, press (SHIFT).

2 Press (7) (REP) repeatedly until the desired setting appears.

Repeat 1 → Repeat 2 → Repeat off → Repeat 1

Repeat Play starts.

3 Press (SHIFT).

To go back to normal playback mode, select "Repeat off" in step 2 above.

Playing tracks in random order — Shuffle Play

You can select:
- Shuf 1 to play the tracks on the current disc in random order.
- Shuf All to play all the tracks in random order.

1 During playback, press (SHIFT).

2 Press (8) (SHUF) repeatedly until the desired setting appears.

Shuf 1 → Shuf All → Shuf off → Shuf 1

Shuffle Play starts.

3 Press (SHIFT).

To go back to normal playback mode, select "Shuf off" in step 2 above.

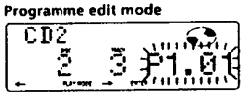
Creating a programme

— Programme Memory (CD/MD unit with the programme memory function)

You can play tracks in the order you want by making your own programme. You can make two programmes: Programme 1 and Programme 2. You can select up to 12 tracks for each programme. You can store the programmes in memory.

1 Press (SHIFT), then press (4) (PLAY MODE) for two seconds.

Programme edit mode



"P 1" shows Programme 1 is selected.

If you have labelled the disc, the bank edit mode appears. Press (4) (PLAY MODE) to display "P 1" above.

To select Programme 2, press (5) (→) repeatedly until "P 2" appears.

2 Select the track you want.

❶ Press (SOURCE) repeatedly to select CD or MD.

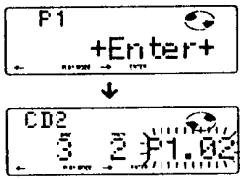
❷ Press (MODE) repeatedly to select the unit.

❸ Press (SHIFT), then press the number button to select the disc.

❹ Press (SHIFT).

❺ Push the SEEK/AMS control up or down to select the track.

3 Press (6) (ENTER) momentarily.



4 To continue entering tracks, repeat steps 2 and 3.

5 When you finish entering tracks, press (4) (PLAY MODE) for two seconds.

6 Press (SHIFT).

Notes

- *"*Wait*" appears in the display while the unit is reading the data, or when a disc has not been put into the unit.*
- *"*Mem Full*" appears in the display when you try to enter more than 12 tracks into a programme.*

Playing the stored programme

Changing the disc order in the unit will not affect programme memory play.

You can select:
- PGM 1 to play Programme 1.
- PGM 2 to play Programme 2.
- PGM 1+2 to play Programmes 1 and 2.

1 Press (SHIFT).

2 Press (4) (PLAY MODE) repeatedly until "PGM" appears.

3 Press (5) (→) repeatedly until the desired programme appears.

PGM 1 → PGM 2 → PGM 1+2 → PGM off →

Programme Play starts.

4 Press (SHIFT).

To go back to normal playback mode, select "PGM off" in step 3 above.

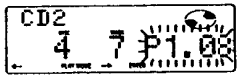
Notes

- *If you press a number button during programme memory play, programme memory play is interrupted, and playback of the selected disc starts.*
- *"NO Data" appears in the display if no track is stored in the programme.*
- *If a track stored into the programme memory is not in the disc magazine, the track will be skipped.*
- *When the disc magazine contains no tracks stored into the programme memory, or when the programme information has not been loaded yet, "Not ready" appears.*

EN

Erasing an entire programme

1 Press (SHIFT), then press (4) (PLAY MODE) for two seconds.



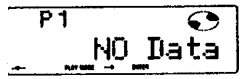
"P 1" shows Programme 1 is selected.

If you have labelled the disc, the bank edit mode appears. Press (4) (PLAY MODE) to display "P 1" above.

2 Press (2) (←) repeatedly until "DEL" appears.

To erase Programme 2, press (5) (→) repeatedly until "PGM 2" appears.

3 Press (6) (ENTER) for two seconds.



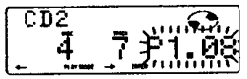
The entire programme is erased.

4 When you finish erasing programmes, press (4) (PLAY MODE) for two seconds.

5 Press (SHIFT).

Adding tracks to a programme

1 Press (SHIFT), then press (4) (PLAY MODE) for two seconds.



"P 1" shows Programme 1 is selected.

If you have labelled the disc, the bank edit mode appears. Press (4) (PLAY MODE) to display "P 1" above.

To select Programme 2, press (5) (→) repeatedly until "P 2" appears.

2 Press (2) (←) or (5) (→) to select the track slot number where you want to insert a track.

Track slot number

3 Push the SEEK/AMS control up or down to select the track you want to insert.

4 Press (6) (ENTER) momentarily to enter the track.
The current track in that slot number and the succeeding tracks shift down.
To continue inserting tracks, repeat steps 2 through 4.

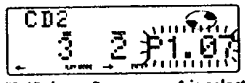
Note
*Once all 12 slots have been filled, "*Mem Full*" appears in the display, and you cannot insert tracks.*

5 When you finish inserting tracks, press (4) (PLAY MODE) for two seconds.

6 Press (SHIFT).

Erasing tracks in a programme

1 Press (SHIFT), then press ④ (PLAY MODE) for two seconds.

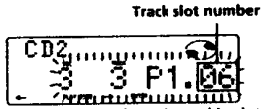


"P 1" shows Programme 1 is selected.

If you have labelled the disc, the bank edit mode appears. Press ④ (PLAY MODE) to display "P 1" above.

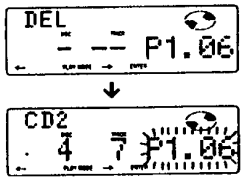
To select Programme 2, press ⑤ (→) repeatedly until "P 2" appears.

2 Press ② (←) or ⑤ (→) to select the track you want to erase.



The track currently registered in slot 6 of Programme 1.

3 Press ⑥ (ENTER) for two seconds.
When you erase a track from a slot number, the succeeding tracks shift up to fill the gap.



4 To continue erasing tracks, repeat steps 2 and 3.

5 When you finish erasing tracks, press ④ (PLAY MODE) for two seconds.

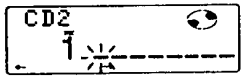
6 Press (SHIFT).

Labeling a CD

— Disc Memo (CD unit with the custom file function)

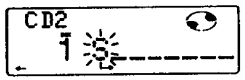
You can label each disc with a personalized name. You can enter up to eight characters for a disc. If you label a CD, you can locate the disc by name (page 25) and select the specific tracks for playback (page 25).

1 Play the CD and press (LIST) for two seconds.



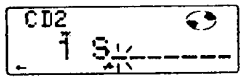
2 Enter the characters.

❶ Rotate the dial clockwise to select the desired characters.
(A → B → C → ··· Z → 0 → 1 → 2 → ··· 9 → + → − → * → / → \ → > → < → . → _)



If you rotate the dial counterclockwise, the characters appear in the reverse order.
If you want to put a blank space between characters, select "_" (underbar).

❷ Press ⑤ (→) after locating the desired character.
The flashing cursor moves to the next space.



If you press ② (←), the flashing cursor moves to the left.

❸ Repeat steps ❶ and ❷ to enter the entire name.

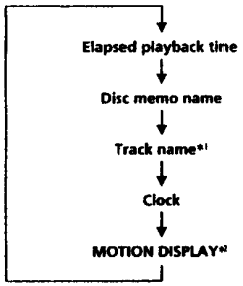
3 To return to normal CD playback mode, press (LIST) for two seconds.

Tip
To erase/correct a name enter "_" (under-bar) for each character.

Displaying the disc memo name

Press (DSPL) during CD or CD TEXT disc playback.

Each time you press (DSPL) during CD or CD TEXT disc playback, the item changes as follows:



1 If you connect an optional CD unit with the CD TEXT function, the CD TEXT information will appear in the display when you playback a CD TEXT disc.
2 All the items above are scroled in the display one by one in order.

Erasing the disc memo

1 Press (SOURCE) repeatedly to select CD.

2 Press (MODE) repeatedly to select the CD unit.

3 Press (LIST) for two seconds.

4 Press (DSPL) for two seconds.

5 Rotate the dial to select the name you want to erase.

6 Press ⑥ (ENTER) for two seconds.
The name is erased.
Repeat steps 5 and 6 if you want to erase other names.

7 Press (LIST) for two seconds.
The unit returns to normal CD playback mode.

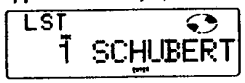
Note
When the personalized label is erased, the original CD TEXT information will appear in the display.

Locating a disc by name

— List-up (CD unit with the custom file function or MD unit)

You can use this function for discs that have been assigned a custom name. For more information on disc names, refer to "Labeling a CD" (page 23).

1 Press (LIST) momentarily.
The name assigned to the current disc appears in the display.



When you assign a disc memo label to a CD TEXT disc, it takes priority over the original CD TEXT information.

2 Press (LIST) repeatedly until you find the desired disc.

3 Press (6) (ENTER) to play back the disc.

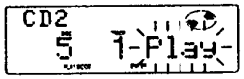
Notes
- *After a disc name has been displayed for five seconds, the display goes back to normal playback mode. To turn off the display, press (DSPL).*
- *The track names are not displayed during MD or CD TEXT disc playback.*
- *If there are no discs in the magazine, "NO Disc" appears in the display.*
- *If a disc has not been assigned a custom file, "********" appears in the display.*
- *If the disc information has not been read by the unit, "?" appears in the display. To load the disc, first press the number button, then choose the disc that has not been loaded.*
- *The information appears only in upper case. There are also some letters which cannot be displayed (during MD or CD TEXT disc playback).*

Selecting specific tracks for playback

— Bank (CD unit with the custom file function)

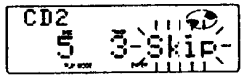
If you label the disc, you can set the unit to skip tracks and play only the tracks you want.

1 Start playing the disc and press (SHIFT). Then press (4) (PLAY MODE) for two seconds.
Bank edit mode.



Note
If you have not labeled the disc, the bank edit mode does not appear and the programme edit mode appears. To go back to normal playback mode, press (SHIFT).

2 Push the SEEK/AMS control up or down to select the track number you want to skip and press (6) (ENTER).



The indication changes from "Play" to "Skip." If you want to return to "Play," press (6) (ENTER) again.

3 Repeat step 2 to set the "Play" or "Skip" mode on all the tracks.

4 Press (4) (PLAY MODE) for two seconds.
The unit returns to normal CD playback mode.

5 Press (SHIFT).

Notes
- *You can set the "Play" and "Skip" mode on up to 24 tracks.*
- *You cannot set the "Skip" mode on all the tracks.*

Playing the specific tracks only

You can select:
- Bank on to play the tracks with the "Play" setting.
- Bank inv (Inverse) to play the tracks with the "Skip" setting.

1 During playback, press (SHIFT), then press (4) (PLAY MODE) repeatedly until "Bank" appears.

2 Press (5) (→) to repeatedly until the desired setting appears.

→ Bank on → Bank inv → Bank off

Playback starts from the track following the current one.

3 Press (SHIFT).

To go back to normal playing mode, select "Bank off" in step 2 above.

With Optional Equipment

DSP

The optional XDP-U50D lets you add some effects to the sound field of the currently selected source.

Selecting a surround menu

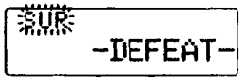
You can select a desired surround menu to best fit the audio source. The following menus can simulate different sound fields and enhance the sound so that you can feel as if you are in a live concert.

Surround menu

HALL	Concert hall
JAZZ	Jazz club
DISCO	Disco with thick walls
THEATER	Movie theater
PARK	Big open space
LIVE	Live concert
OPERA	Opera house
CHURCH	Church/chapel with a lot of reverberation
STADIUM	Open-air concert in a stadium
CELLAR	Cellar with a lot of reverberation
DEFEAT	Normal sound without any DSP effects

1 Press (SOURCE) to select a source (tuner, CD or MD).

2 Press (SOUND) repeatedly until "SUR" appears.



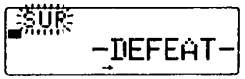
3 Rotate the dial to select the desired surround menu.
The surround menu appear in the order shown above.

After three seconds, the display goes back to normal mode.

Adjusting the effect level

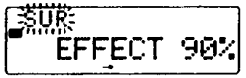
1 Press (SOURCE) to select a source (tuner, CD or MD).

2 Press (SOUND) for two seconds.

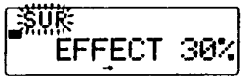


3 Rotate the dial until the desired surround menu appears.

4 Press ④ (→).



5 Rotate the dial to adjust the level.
You can adjust the level from 0 to 100%. Increase the level to enhance the effect.



6 Press (SOUND) for two seconds.

Storing a surround effect onto CDs

— Digital Signal Processor (DSP) Custom File (CD unit the with custom file function)

Once you have registered the desired surround menu onto the discs, you can enjoy the same surround menu every time you play that disc. (Only when you have labeled a disc by the Custom File function.)

1 Press (LIST) for two seconds.

2 Press (LIST) until the surround menu appears.
DSP custom file mode

3 Rotate the dial to select the desired surround menu.

4 Press (LIST) for two seconds.
After the effect setting is complete, the display goes back to normal playback mode.

Playing the disc with the stored surround menu

1 Press (SHIFT), then press ③ (PLAY MODE) repeatedly until "D.File" appears.

2 Press ⑤ (→) to select the "D.File on."
After five seconds, the display goes back to normal playback mode.

3 Press (SHIFT).

To cancel to play the disc with stored surround menu, select "D.File off" in step 2.

Changing the stored surround effect

Play the disc whose surround mode you want to change, and follow the steps of "Storing the surround effect onto CDs."

Erasing the stored surround effect

Select "DEFEAT" in step 3 of "Storing the surround effect onto CDs."

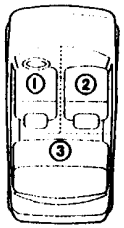
EN

CD/MD Unit/DSP

EN

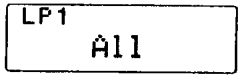
Selecting the listening position

You can set the time for the sound to reach the listeners from the speakers.
The unit can simulate a natural sound field so that you can feel as if you are in the center of the sound field wherever you sit in the car.



Display window	Center of sound field
LP1 All	Normal setting (① + ② + ③)
LP2 Front	Front part (① + ②)
LP3 Front R	Right front (②)
LP4 Front L	Left front (①)
LP5 Rear	Rear part (③)

1 Press (SOUND) momentarily until "LP1" appears.



2 Rotate the dial to select the desired listening position.
The listening positions appear in the order shown above.

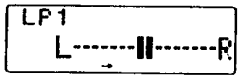
After three seconds, the display goes back to normal playback mode.

Adjusting the listening position

1 Press (SOUND) for two seconds.

2 Press (SOUND) repeatedly until the desired listening position appears.

3 Press ⑤ (→).

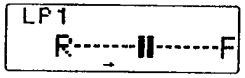


4 Rotate the dial to adjust the center of the sound field to the left or right. Then set the center of the sound field.

Center moves to the L (left).

Center moves to the R (right).

5 Press ⑤ (→).



6 Rotate the dial to adjust the center of the sound field to the front or rear.

Center moves to the R (rear).

Center moves to the F (front).

7 Press (SOUND) for two seconds.
After the position setting is complete, normal playback mode appears.

Adjusting the fader (FAD)

Normally, with the DSP mode on, the volume of the output sound from the rear speakers is lowered automatically to improve the efficiency of the listening position setting. If you want to raise the rear speaker volume, adjust the fader.

1 **Follow steps 1 through 3 of "Selecting a surround menu" (page 26).**

2 **Press (SOUND) repeatedly until "FAD" appears.**

3 **Rotate the dial to adjust the fader.**

Decreases front speaker volume

Increases front speaker volume

After three seconds, the display goes back to normal playback mode.

Adjusting the volume of the subwoofer(s)

1 **Press (SOURCE) to select a source (tuner, CD or MD).**

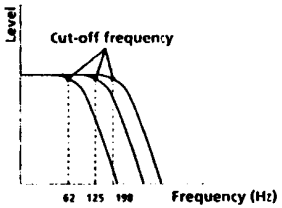
2 **Press (SOUND) repeatedly until "SUB" appears.**

3 **Rotate the dial to adjust the volume.**
After three seconds, the display goes back to normal playback mode.

Tip
When you rotate the dial to turn the volume all the way down, "Sub mute" appears and the cutout frequency of the subwoofer is disabled.

Adjusting the frequency of the subwoofer(s)

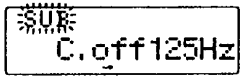
To match the characteristics of the connected subwoofer(s), you can cut out the unwanted high and middle frequency signals entering the subwoofer(s). By setting the cut-off frequency (see the diagram below), the subwoofer(s) will output only low frequency signals so you can get a clearer sound image.



1 **Press (SOURCE) to select a source (tuner, CD or MD).**

2 **Press (SOUND) for two seconds.**

3 **Press (SOUND) repeatedly until "SUB" appears.**



4 **Rotate the dial to select the desired cut-off frequency.**
The cut-off frequency in the display changes.

62 → 78 → 99 → 125* → 157 → 198 Hz

*** Factory-set frequency**

5 **Press (SOUND) for two seconds.**
After the frequency setting is complete, the display goes back to normal playback mode.

EN

DSP

EN

Adjusting the volume of the bass and treble

You can adjust the volume of the bass and treble to best fit the acoustic characteristics inside your car.

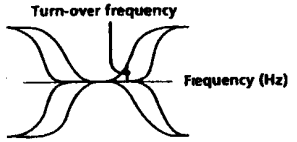
1 **Press (SOURCE) to select a source (tuner, CD or MD).**

2 **Press (SOUND) repeatedly until "BAS" or "TRE" appears.**

3 **Rotate the dial to adjust the volume.**
After three seconds, the display goes back to normal playback mode.

Adjusting the turn-over frequency

You can adjust the bass and treble turn-over frequencies.

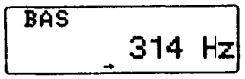


1 **Press (SOURCE) to select a source (tuner, CD or MD).**

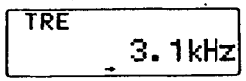
2 **Press (SOUND) for two seconds.**

3 **Press (SOUND) repeatedly until "BAS" or "TRE" appears.**

Bass adjusting mode



Treble adjusting mode



4 **Rotate the dial to select the turn-over frequency.**
The turn-over frequencies change as follows:

Bass:
198 Hz → 250 Hz → 314 Hz* → 396 Hz

Treble:
2.0 kHz → 3.1 kHz* → 4.0 kHz → 5.0 kHz

*** Factory-set frequency**

5 **Press (SOUND) for two seconds.**
The display goes back to normal playback mode.

Listening to each program source in its registered surround menu

— Last Sound Memory (LSM)

You can listen to the same source always in the same surround menu even after changing the program source or turning the unit on and off again.

Changing the line output level

You can change the line output level if you hear distortion or other noise.

1 **Press (SHIFT), then press (3) (SET UP) until "L.out" appears.**

2 **Press (5) (→) to select the desired setting (–10 dB or –16 dB).**

3 **Press (SHIFT).**

With Optional Equipment

TV/Video

You can connect an optional TV tuner and TV monitor with this unit.

Watching the TV

1 **Press (SOURCE) repeatedly until "TV" appears.**

2 **Push the SEEK/AMS control up or down to select the desired TV band.**

Watching a video

1 **Press (SOURCE) repeatedly until "TV" appears.**

2 **Press (MODE) repeatedly to select "Video 1."**
Play back the video.

Note
"Video 2" appears if the VIDEO 2 terminal of the TV monitor is selected.

Memorizing TV channels automatically

The unit selects the TV channels with the strongest signals and memorizes them in the order of their frequency.

Caution
When tuning in a station while driving, use Best Tuning Memory to prevent accidents.

1 **Press (SOURCE) repeatedly until "TV" appears.**

2 **Press (SHIFT), then press (4) (PLAY MODE) repeatedly until "Auto mem" appears.**

3 **Press (5) (→).**
The unit stores TV channels in the order of their frequencies on the number buttons. A beep sound and the setting is stored.

4 **Press (SHIFT).**

Notes
- *The unit does not store TV channels with weak signals. If only a few TV channels are received, some number buttons will remain empty.*
- *When a preset number is indicated in the display, the unit starts storing TV channels from the one currently displayed.*

Memorizing only the desired TV channels

You can store up to 10 channels on the number buttons in the order of your choice.

1 **Press (SOURCE) repeatedly until "TV" appears.**

2 **Push the SEEK/AMS control up or down to tune in the TV program you want to store on the number button.**

3 **Press and hold the desired number button ((1) to (10)) until you hear a beep tone.**
The number button indication appears in the display.

Note
If you try to store another program on the same number button, the previously stored program will be erased.

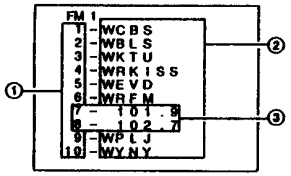
Storing the TV channel names

Follow the steps in "Storing the station names" (page 14).

Displaying the TV or radio station names

Press (LIST) momentarily during TV or radio reception.

Example: When receiving the FM1 band



① **Preset number**
② **Stored station names**
③ **Frequencies***

* *If the name of a station is not stored, the frequency of that station will be displayed instead.*

Notes
- *It may take some time before all indications appear in the display.*
- *The TV monitor does not appear during list display.*
- *The contents of the preset memory cannot be listed when the unit is in the simultaneous play mode (page 33).*

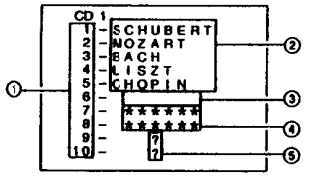
Turning off the display

During radio reception, press (LIST) again.
During TV reception, the list display on the TV monitor will automatically turn off after a few seconds.

Displaying the information stored on discs

Press (LIST) momentarily during CD/MD playback.

Example: When CD unit 1 is selected.



① **Disc numbers**
② **Titles stored as custom files**
③ **No disc is loaded*1**
④ **No stored titles*2**
⑤ **TOC information has not been identified yet*3**

*1 *A blank space is displayed next to a disc numbers representing empty slots in the disc magazine.*
*2 *If a title is not registered in the custom file, "******" is displayed.*
*3 *If the disc information has not been read yet, "?" is displayed.*

Notes
- *It may take some time until all indications appear in the display.*
- *The TV program does not appear during list display.*
- *The contents of the preset memory cannot be listed when the unit is in the simultaneous play mode.*

Turning off the display

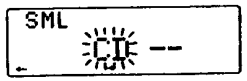
Press (LIST) again.

Watching the TV or video while listening to a CD or MD — Simultaneous Play

The simultaneous play function does not work while you are listening to the radio.

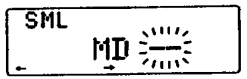
1 Press (SOURCE) for two seconds.

2 Press ② (←).

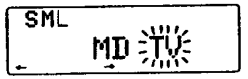


3 Press (SOURCE) repeatedly to select a CD or MD.

4 Press ⑤ (→).



5 Press (SOURCE) repeatedly to select a TV or video.



6 Press (SOURCE) for two seconds.
Simultaneous Play starts.

Returning to normal mode

To cancel the CD or MD, follow the steps above and select "- -" in step 3.

To cancel the TV or video, follow the steps above and select "- -" in step 5.

Notes
If you press the EJECT button on a CD/MD unit while the unit is in simultaneous play mode, Simultaneous Play is canceled.

Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all ground wires to a common ground point.**
- Connect the yellow cord to a free car circuit rated higher than the unit's fuse rating. If you connect this unit in series with other stereo components, the car circuit they are connected to must be rated higher than the sum of the individual component's fuse rating. If there are no car circuits rated as high as the unit's fuse rating, connect the unit directly to the battery. If no car circuits are available for connecting this unit, connect the unit to a car circuit rated higher than the unit's fuse rating in such a way that if the unit blows its fuse, no other circuits will be cut off.
- The use of optical instruments with this product will increase eye hazard.

If your car has no accessory position on the ignition key switch — POWER SELECT switch

The illumination on the front panel is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery wear if your car has no accessory position on the ignition key switch. To avoid this battery wear, **set the POWER SELECT switch located on the bottom of the unit to the ● position, then press the reset button.** The illumination is reset to stay off while the unit is not being played.

Notes

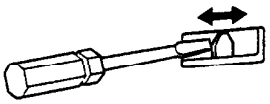
- *The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the ● position.*
- *Do not use excessive force when changing the POWER SELECT switch.*

When a digital pre-amplifier etc. is connected — LINE-OUT/IN SELECT switch

Set the LINE-OUT / IN SELECT switch, which is on the underside of the unit, to position ●, so that the LINE-OUT / IN terminal will function as LINE-IN terminal.
With the switch in position ①, the terminal will work as LINE-OUT terminal.

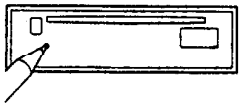
Notes

When you change the position of the switch, be sure to press the reset button after the connections are completed.



Reset button

When the installation and connections are over, be sure to press the reset button with a ball-point pen etc.



Inverter

- Install the inverter far away from the unit using double-sided adhesive tape or something similar.
- Be sure not to mount the inverter under a mat or in a place exposed to splashing water of air conditioner. It may cause electric shock or damage to the unit.

Note

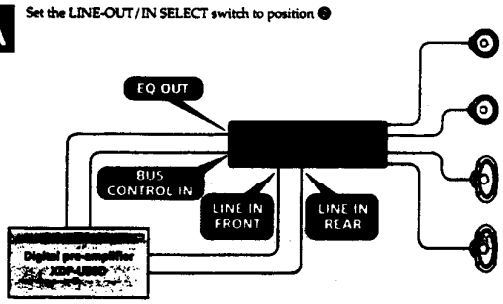
If the inverter's cord is pinched, the display indications may not appear.

Equipment used in illustrations (not supplied)

For connecting two or more changers, the source selector XA-C30 (optional) is necessary.

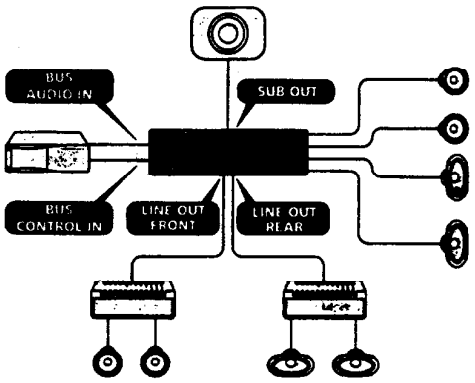
Connection diagram

A Set the LINE-OUT / IN SELECT switch to position ●

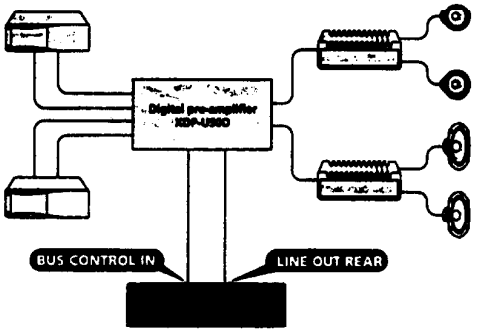


For details about the connection, refer to the operating instructions of XDP-U50D (not supplied).

B Set the LINE-OUT / IN SELECT switch to position ①

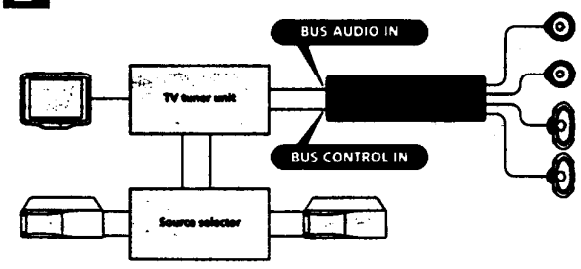


C Set the LINE-OUT / IN SELECT switch to position ①

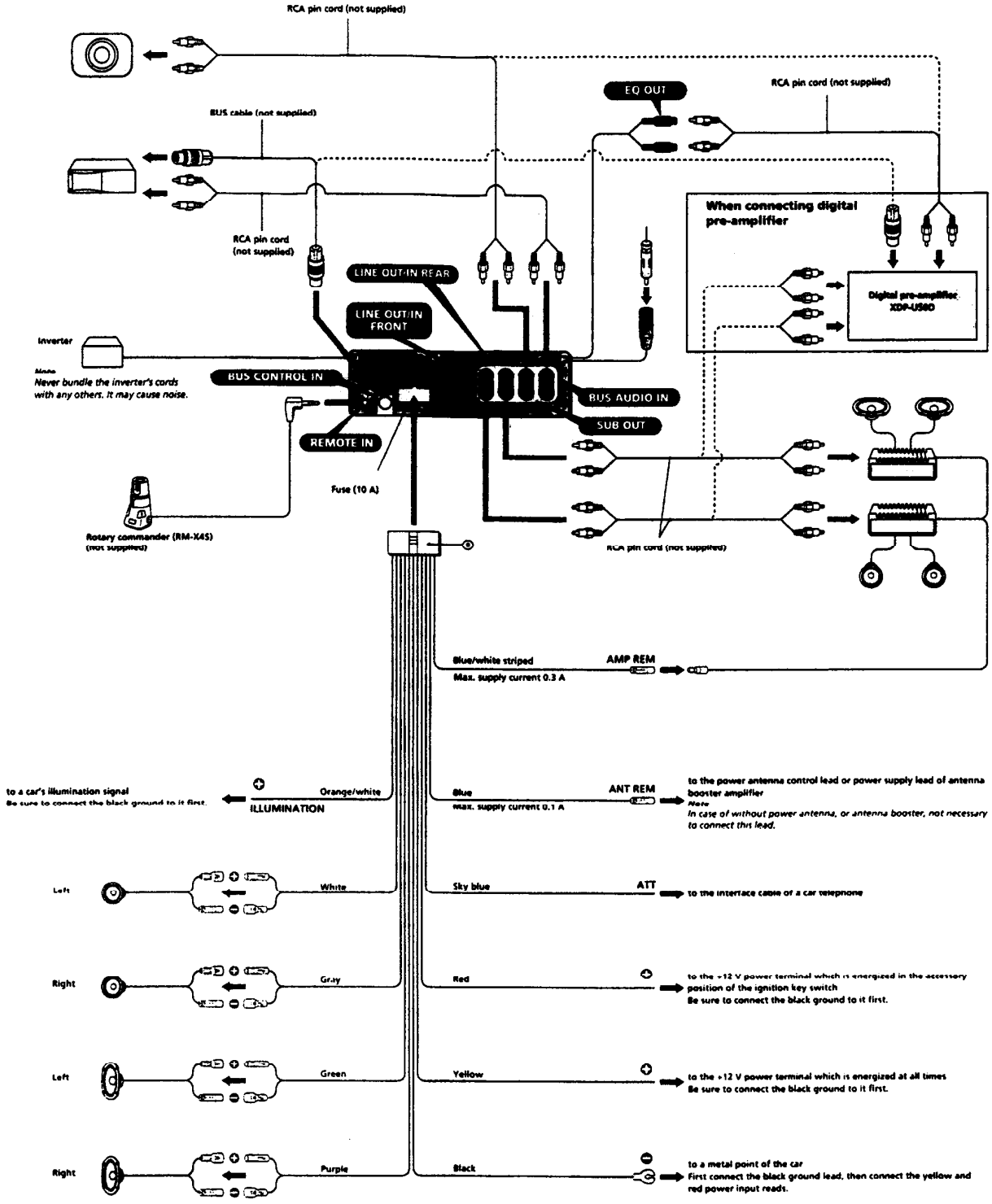


For details about the connection, refer to the operating instructions of XDP-U50D (not supplied).

D



Connection example


RCA pin cord (not supplied)
BUS cable (not supplied)
EQ OUT
RCA pin cord (not supplied)
When connecting digital pre-amplifier
Digital pre-amplifier XDP-U580
RCA pin cord (not supplied)
LINE OUT-IN REAR
LINE OUT-IN FRONT
Inverter
Never bundle the inverter's cords with any others. It may cause noise.
BUS CONTROL IN
BUS AUDIO IN
SUB OUT
REMOTE IN
Fuse (10 A)
Rotary commander (RM-X4S) (not supplied)
RCA pin cord (not supplied)
Blue/white striped
AMP REM
Max. supply current 0.3 A
to a car's illumination signal
Be sure to connect the black ground to it first.
Orange/white
ILLUMINATION
Blue
ANT REM
max. supply current 0.1 A
to the power antenna control lead or power supply lead of antenna booster amplifier
Note
In case of without power antenna, or antenna booster, not necessary to connect this lead.
Left
White
Sky blue
ATT
to the interface cable of a car telephone
Right
Gray
Red
to the +12 V power terminal which is energized in the accessory position of the ignition key switch
Be sure to connect the black ground to it first.
Left
Green
Yellow
to the +12 V power terminal which is energized at all times
Be sure to connect the black ground to it first.
Right
Purple
Black
to a metal point of the car
First connect the black ground lead, then connect the yellow and red power input leads.

Notes on the control leads

- *The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection

When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

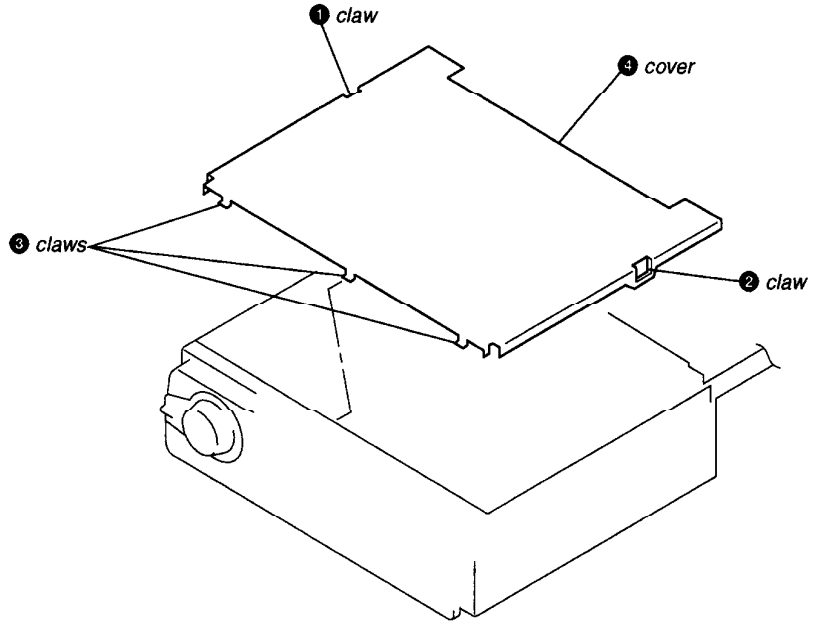
Notes on speaker connection

- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

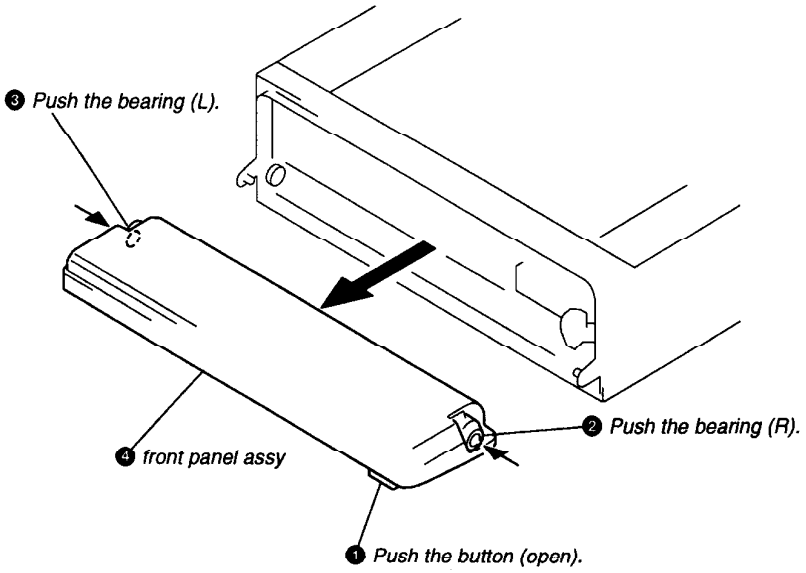
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

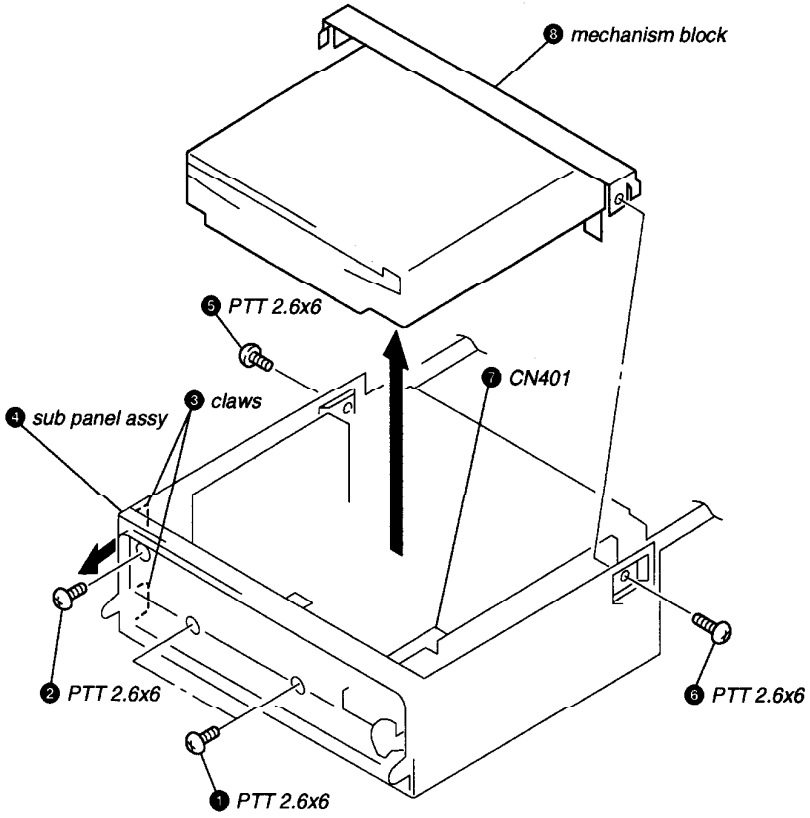
2-1. COVER



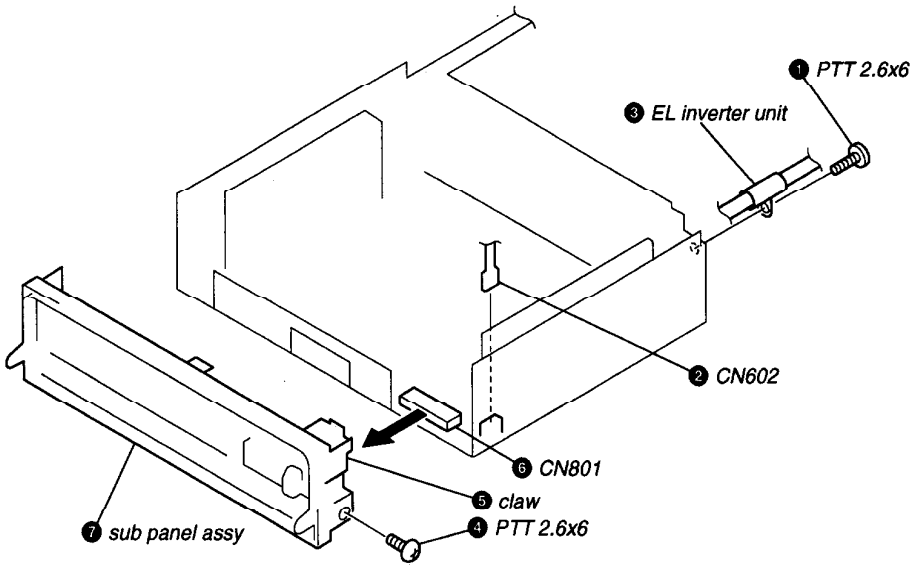
2-2. FRONT PANEL ASSY



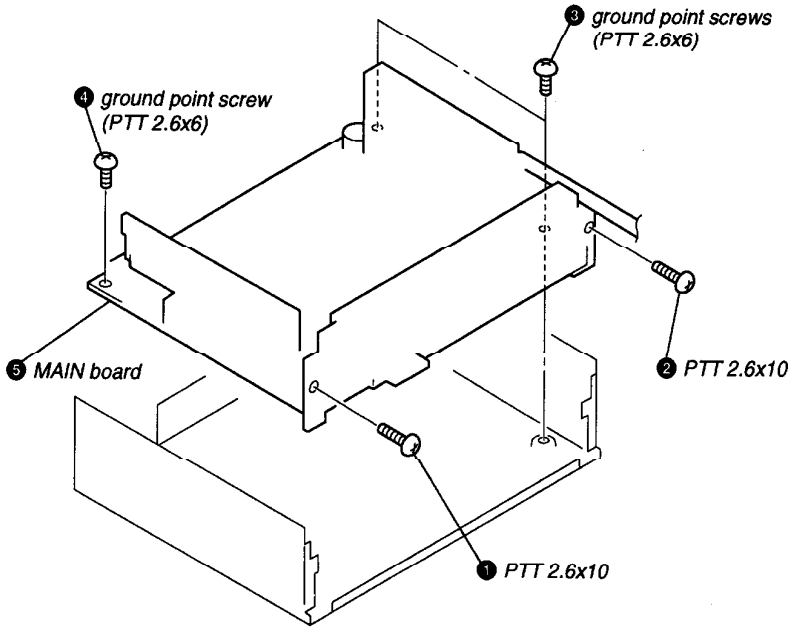
2-3. MECHANISM BLOCK



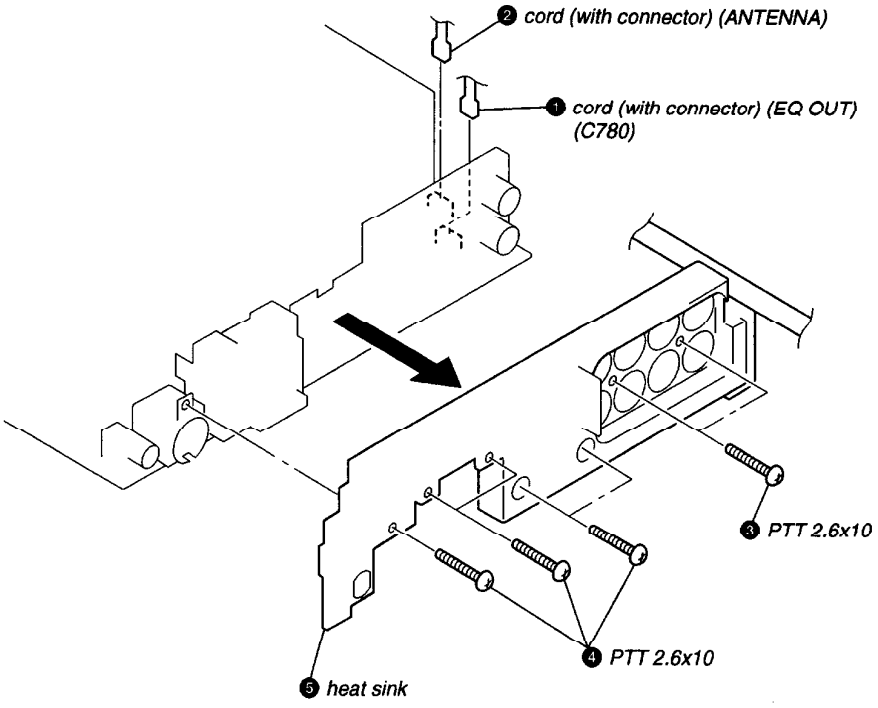
2-4. SUB PANEL ASSY



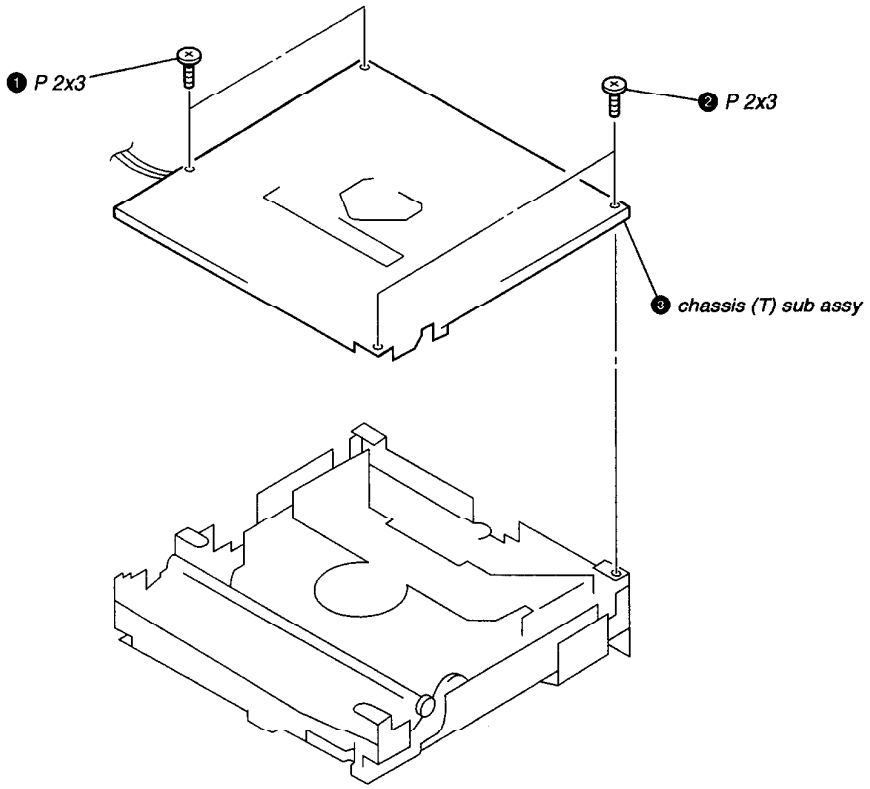
2-5. MAIN BOARD



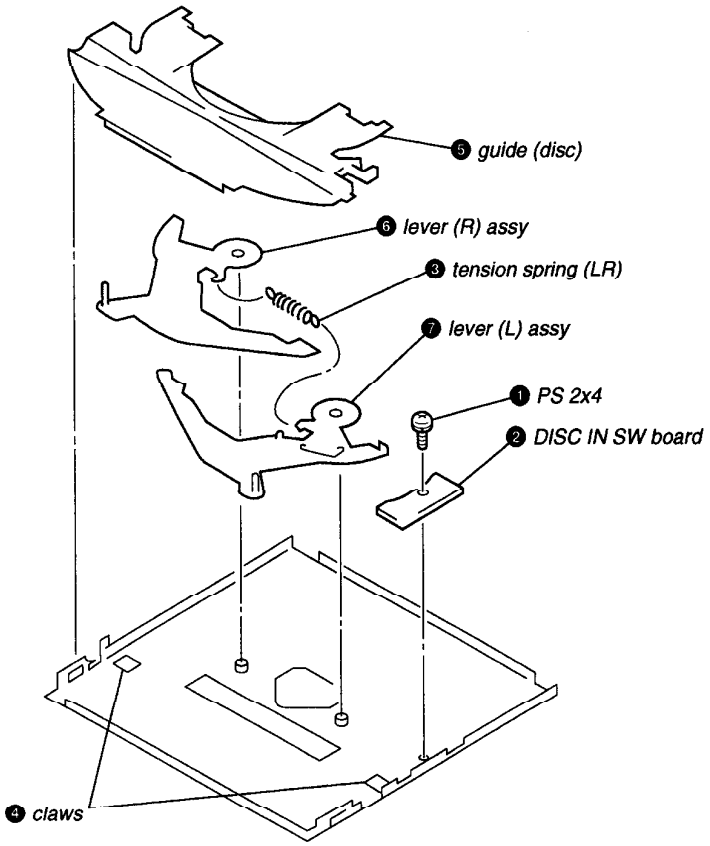
2-6. HEAT SINK



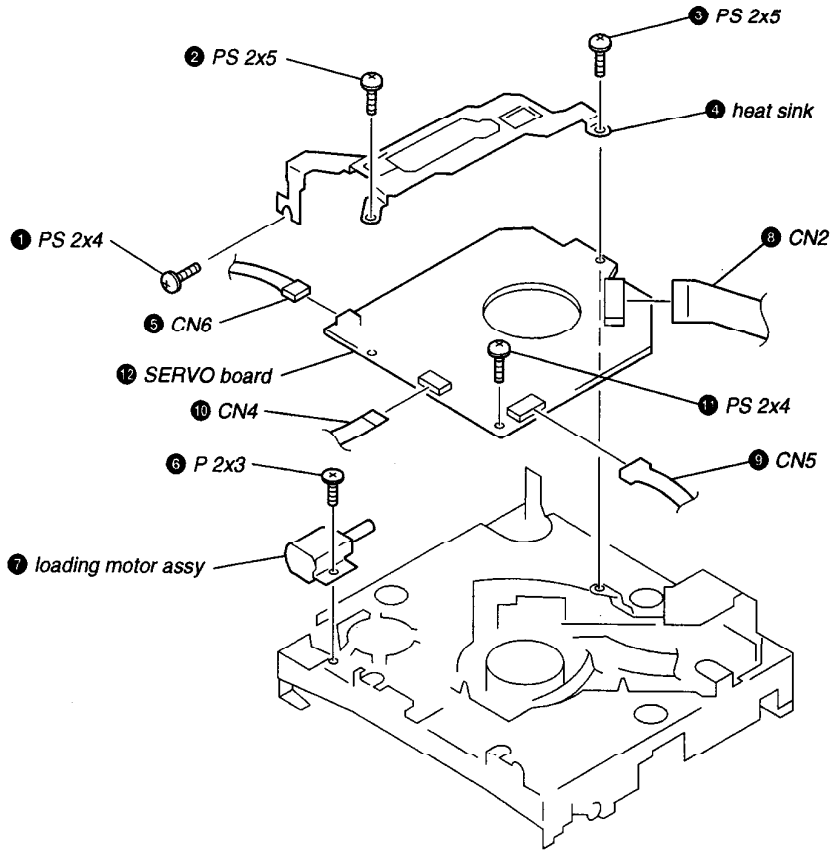
2-7. CHASSIS (T) SUB ASSY



2-8. LEVER ASSY

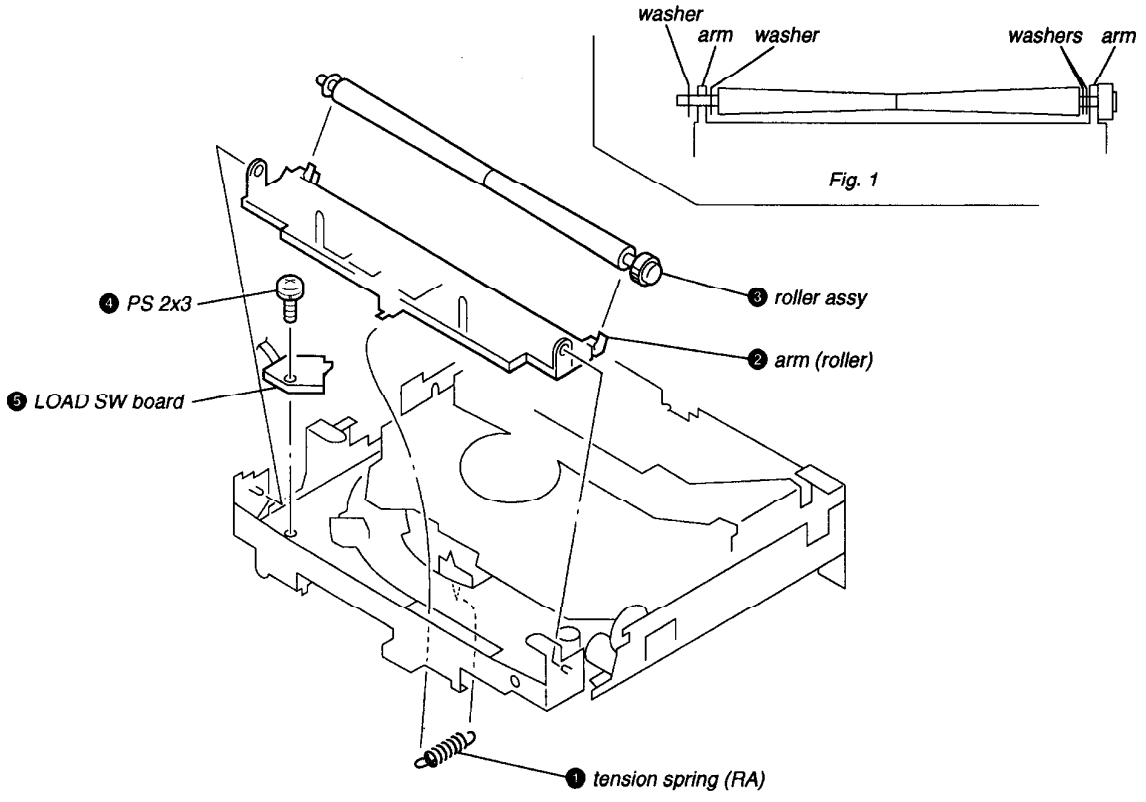


2-9. SERVO BOARD

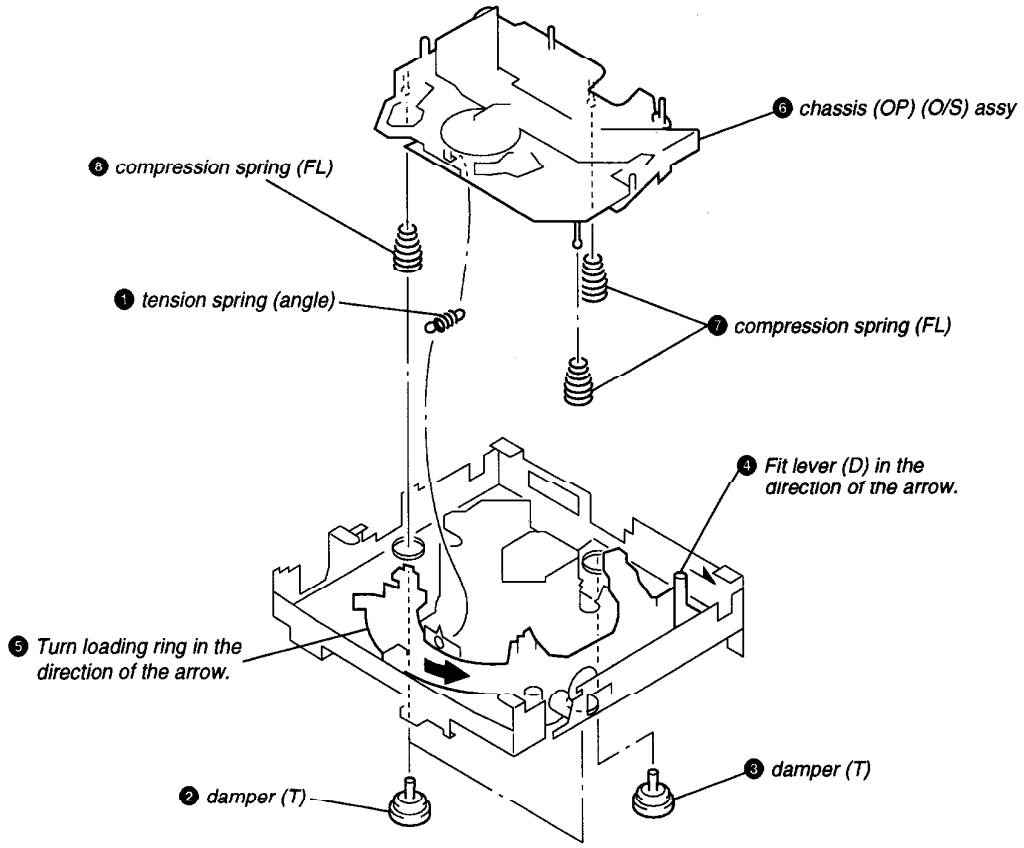


2-10. ROLLER ASSY

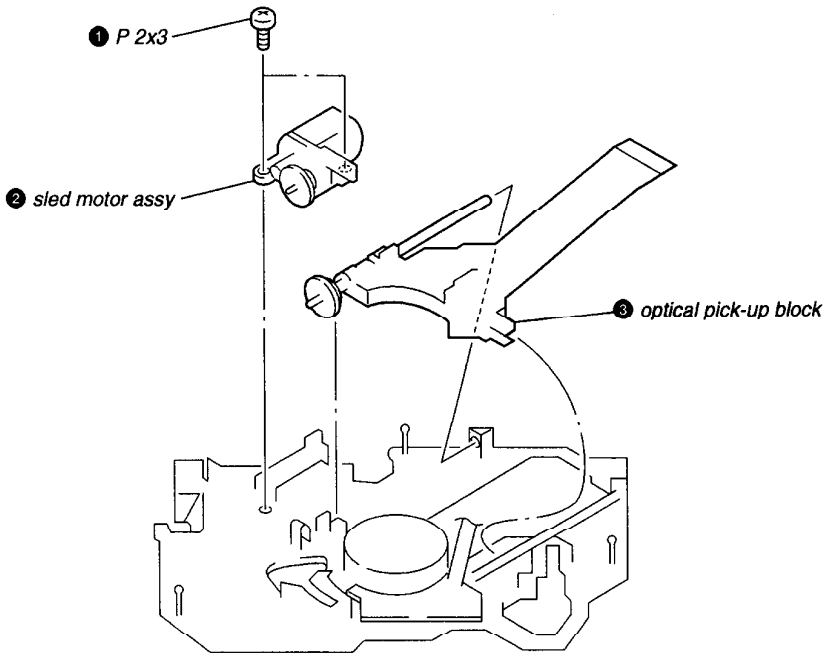
• When installing, take note of the positions arm (roller) and washers. (Fig. 1)



2-11. CHASSIS (OP) (O/S) ASSY


❻ chassis (OP) (O/S) assy
❽ compression spring (FL)
❶ tension spring (angle)
❼ compression spring (FL)
❹ Fit lever (D) in the direction of the arrow.
❺ Turn loading ring in the direction of the arrow.
❸ damper (T)
❷ damper (T)

2-12. OPTICAL PICK-UP BLOCK



SECTION 3
ELECTRICAL ADJUSTMENTS

CD SECTION

CD section adjustments are done automatically in this set.

TUNER SECTION **0 dB = 1 µV**

Cautions during repair

When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and AM Auto Scan/Stop Level adjustments can be performed easier than it in ordinary procedure.

<Set the Test Mode>

1. Set the "OFF" mode.
2. Push the preset [4] button.
3. Push the preset [5] button.
4. Press the preset [1] button for more than two seconds.
5. Then the display indicates all lights, the test mode is set.

<Release the Test Mode>

1. Push the [OFF] button.

Note on Adjustment

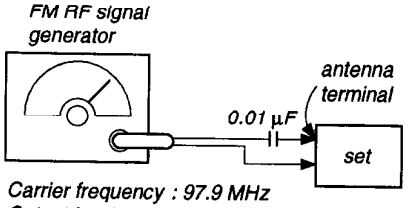
The adjustments of tuner section, should be performed according to the following sequence.

1. FM Auto Scan/Stop Level Adjustment
2. FM Stereo Separation Adjustment
3. AM Auto Scan/Stop Level Adjustment

FM Auto Scan/Stop Level Adjustment

Setting :

SOURCE button : FM

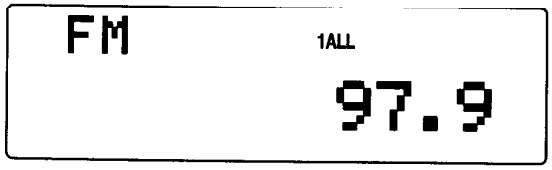


Carrier frequency : 97.9 MHz
Output level : 22 dB (12.6 µV)
Mode : mono
Modulation : 1 kHz, 22.5 kHz deviation (30%)

Procedure :

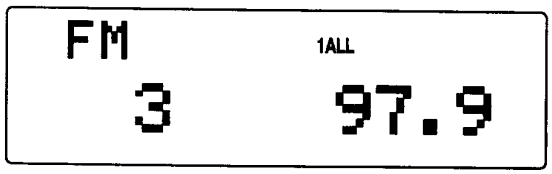
1. Set to the test mode.
2. Push the [SOURCE] button and set to FM.

Display



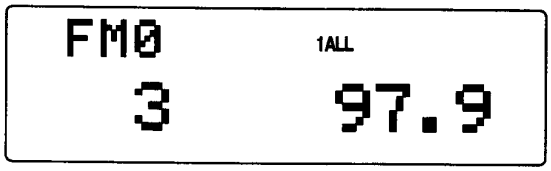
3. Push the preset [3] button.

Display



4. Adjust with the volume RV2 on TU10 so that the "FM" indication turns to "FM0" indication on the display window. But, in case of already indicated "FM0", turn the RV2 so that put out light "0" indication and adjustment.

Display

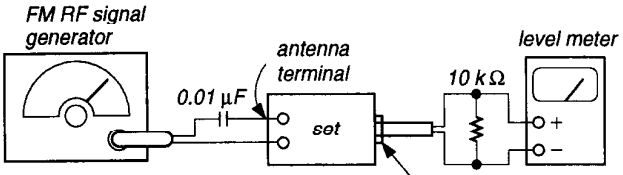


Adjustment Location : See page 29.

FM Stereo Separation Adjustment (WIDE)

Setting :

SOURCE button : FM



Carrier frequency : 97.9 MHz
Output level : 70 dB (3.2 mV)
Mode : stereo
Modulation : main : 1 kHz, 33.75 kHz deviation (45%)
sub : 1 kHz, 33.75 kHz deviation (45%)
19 kHz pilot : 7.5 kHz deviation (10%)

Procedure :

FM stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV3 on TU10 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV3 on TU10 for minimum reading.

L-CH stereo separation : Ⓐ – Ⓑ
R-CH stereo separation : Ⓒ – Ⓓ
The separations of both channels should be equal.

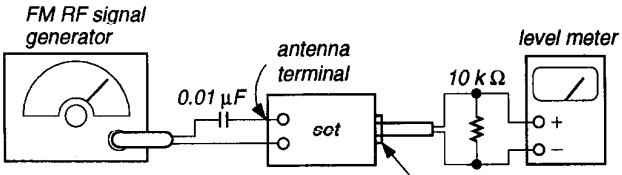
Specification : Separation more than 24 dB

Adjustment Location : See page 29.

FM Stereo Separation Adjustment (NARROW)

Setting :

SOURCE button : FM



Carrier frequency : 97.9 MHz
Output level : 70 dB (3.2 mV)
Mode : stereo
Modulation : main : 1 kHz, 33.75 kHz deviation (45%)
sub : 1 kHz, 33.75 kHz deviation (45%)
19 kHz pilot : 7.5 kHz deviation (10%)

Procedure :

1. Push the [SHIFT] button.
2. Push the [4] button three times.
3. Push the [5] button twice and set to NARROW mode.

FM stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 on TU10 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 on TU10 for minimum reading.

L-CH stereo separation : Ⓐ – Ⓑ
R-CH stereo separation : Ⓒ – Ⓓ
The separations of both channels should be equal.

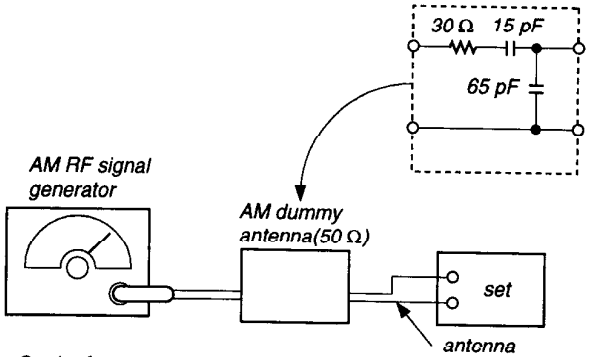
Specification : Separation more than 18 dB

Adjustment Location : See page 29.

AM Auto Scan/Stop Level Adjustment

Setting :

SOURCE → MODE button : AM

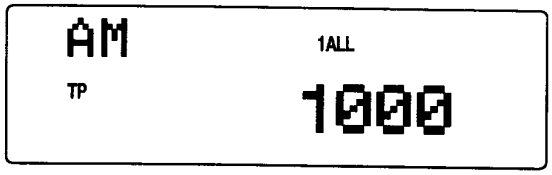


Carrier frequency : 1000 kHz
30% amplitude modulation by 1 kHz signal
output level : 33 dB (44.7 μV)

Procedure :

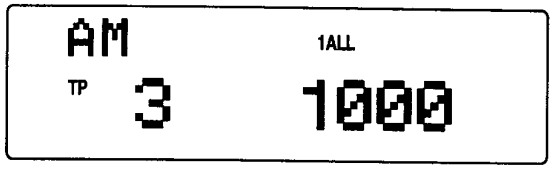
1. Set to the test mode. (See page 27.)
2. Push the [SOURCE] button.
3. Push the [MODE] button and set to AM.

Display



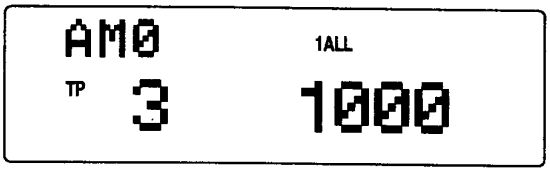
4. Push the preset [3] button.

Display



5. Adjust with the volume RV1 on TU10 so that the "AM" indication turns to "AM0" indication on the display window. But, in case of already indicated "AM0", turn the RV1 so that put out light "0" indication and adjustment.

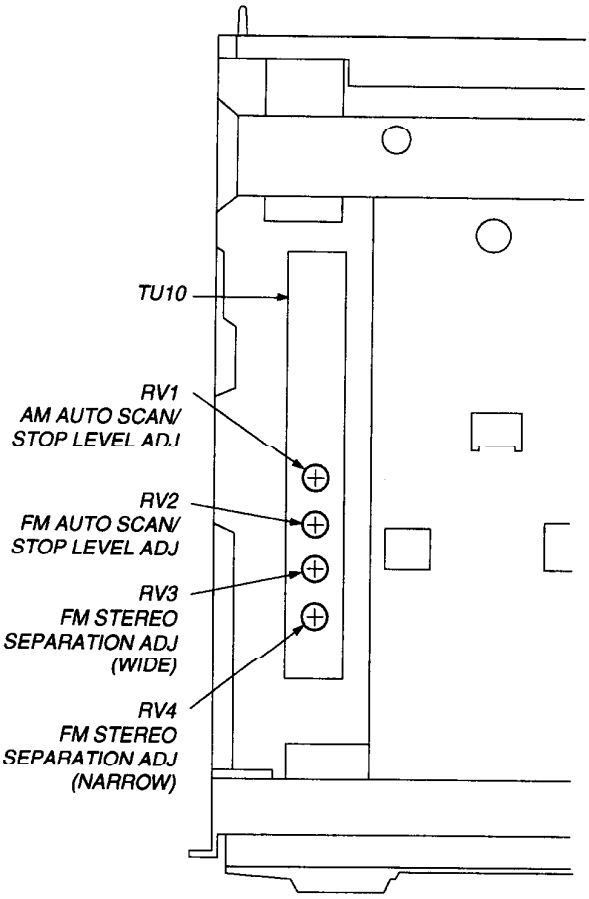
Display



Adjustment Location : tuner unit (TU10)

Adjustment Location : tuner unit (TU10)

–set upper view–



SECTION 4
DIAGRAMS

4-1. IC PIN DESCRIPTIONS

• IC501 CXD2548R (DIGITAL SERVO, DIGITAL SIGNAL PROCESSOR) (SERVO BOARD)

Pin No.	Pin Name	I/O	Pin Description
1	SYSM	I	System mute input (Not used.)
2	RMUT1	O	R-ch, "0" detection output. ("H" : ON, "L" : OFF) (Not used.)
3	LMUT2	O	L-ch, "0" detection output. ("H" : ON, "L" : OFF) (Not used.)
4	CKOUT	O	Master clock frequency division output (Not used.)
5	VDD0	—	Digital power supply
6	SBSO	O	Serial output of sub-P to W. (Not used.)
7	EXCK	I	Clock input for SBSO read output. (Not used.)
8	SQCK	I	Clock input for SQSO read output.
9	SQSO	O	SubQ 80 bit, PCM peak and level data 16 bit output.
10	SENS	O	SENS output. Output to CPU.
11	SCLK	I	Clock input for SENS real data read.
12	DATA	I	Serial data input from CPU.
13	XLAT	I	Latch input from CPU. Latch serial data at the falling edge.
14	CLOK	I	Serial data transfer clock input from CPU
15	XRST	I	System reset ("L" : Reset)
16	ACDT	O	Not used.
17	PWM1	I	External control input of spindle motor.
18	XLON	O	Microcomputer extension interface (Output) (Not used.)
19	SPOA	I	Microcomputer extension interface (Input A) (Not used.)
20	WFCK	O	WFCK (Write Flame Clock) output
21	GTOP	O	GTOP output
22	XUGF	O	XUGF output (Not used.)
23	XPCK	O	XPLCK output (Not used.)
24	GFS	O	GFS output
25	RFCK	O	RFCK output
26	C2PO	O	C2PO output (Not used.)
27	XROF	O	XROF output
28	SCOR	O	"H" output at either detection, sub code sync S0 or S1.
29	MNT0	O	MNT0 output (Not used.)
30	MNT1	O	MNT1 output (Not used.)
31	MNT3	O	MNT3 output (Not used.)
32	VSS1	—	Digital GND
33	DOUT	O	Digital-Out output
34	ATSK	I	For anti-shock.
35	MIRR	O	Mirror signal output (Not used.)
36	DFCT	O	Diffect signal output (Not used.)
37	FOK	O	Focus OK signal output
38	VDD1	—	Digital power supply
39	VPCO1	O	Charge pump output for wideband EFM PLL.
40	VPCO2	O	VCO2 charge pump output for wideband EFM PLL.
41	VCK.I	I	VCO2 oscillator input for wideband EFM PLL.
42	V16M	O	VCO2 oscillator output for wideband EFM PLL.
43	VCTL	I	VCO2 control input for wideband EFM PLL.
44	PCO	O	Charge pump output for master PLL.
45	FILO	O	Filter output for master PLL (slave = digital PLL).
46	FILI	I	Filter input for master PLL.
47	AVSS4	—	Analog GND
48	CLTV	I	VCO control voltage input for master.
49	AVDD4	—	Analog power supply
50	RFAC	I	EFM signal input
51	BIAS	I	Asymmetry circuit constant current input

Pin No.	Pin Name	I/O	Pin Description
52	ASY.I	I	Asymmetry comparate voltage input
53	ASY.O	O	EFM full-swing output ("L" : VSS, "H" : VDD)
54	VC	I	Center voltage input
55	FE	I	Focus error signal input
56	SE	I	Sled error signal input
57	TE	I	Tracking error signal input
58	CE	I	Center error signal input
59	RFDC	I	RF signal input
60	RFC	I	Condenser connection pin for LPF time constant of RF signal.
61	ADIO	O	OP amplifier output (Not used.)
62	AVSS3	—	Analog GND
63	IGEN	I	Current source reference resistor connection for OP amplifier.
64	AVDD3	—	Analog power supply
65, 66	TES2, 3	I	TEST pin (Fixed at "L".)
67	VSS2	—	Digital GND
68	TEST	I	TEST pin (Fixed at "L".)
69	SFDR	O	Sled drive output
70	SRDR	O	Sled drive output
71	TFDR	O	Tracking drive output
72	TRDR	O	Tracking drive output
73	FFDR	O	Focus drive output
74	FRDR	O	Focus drive output
75	VDD2	—	Digital power supply
76	COUT	O	Track number count signal output (Not used.)
77	LOCK	O	Not used
78	MDS	O	Servo control output of spindle motor. (Not used.)
79	MDP	O	Servo control output of spindle motor.
80	SSTP	I	Disc most inner track detection signal input
81	FSTO	O	2/3 frequency division output of pins 103 and 104.
82	FSTI	I	Reference clock input for digital servo.
83	XTSL	I	X'tal select input ("L" : 16.9344 MHz)
84	C4M	O	4.2336 MHz output
85	WDCK	O	D/A interface. Word clock f = 2Fs
86	VDD3	—	Digital power supply
87	LRCK	O	D/A interface. LR clock f = Fs
88	LRCKI	I	LR clock input to DAC. (48 bit slot) (Not used.)
89	PCMD	O	D/A interface. Serial data (2's COMP, MSB first)
90	PCMDI	I	Audio data input to DAC. (48 bit slot) (Not used.)
91	BCK	O	D/A interface. Bit clock
92	BCKI	I	Bit clock input to DAC. (48 bit slot) (Not used.)
93	EMPH	O	Not used.
94	EMPHI	I	De-emphasis ON/OFF of DAC. ("H" : ON, "L" : OFF) (Not used.)
95	VSS3	—	Digital GND
96	AVSS1	—	L-ch, Analog GND.
97	AVDD1	—	L-ch, Analog power supply.
98	AOUT1	O	L-ch, Analog output. (Not used.)
99	AIN1	I	L-ch, OP amplifier input. (Not used.)
100	LOUT1	O	L-ch, LINE output. (Not used.)
101	AVSS1	—	L-ch, Analog GND.
102	XVDD	—	Analog power supply for master clock.
103	XTAI	I	X'tal oscillator input of master clock (16.9344 MHz).
104	XTAO	O	X'tal oscillator output of master clock. (Not used.)
105	XVSS	—	Analog GND for master clock. (Not used.)

Pin No.	Pin Name	I/O	Pin Description
106	AVSS2	—	R-ch, Analog GND.
107	ROUT2	O	R-ch, LINE output. (Not used.)
108	AIN2	I	R-ch, OP amplifier input. (Not used.)
109	AOUT2	O	R-ch, Analog output. (Not used.)
110	AVDD2	—	R-ch, Analog power supply.
111	AVSS2	—	R-ch, Analog GND.
112	VSS0	—	Digital GND

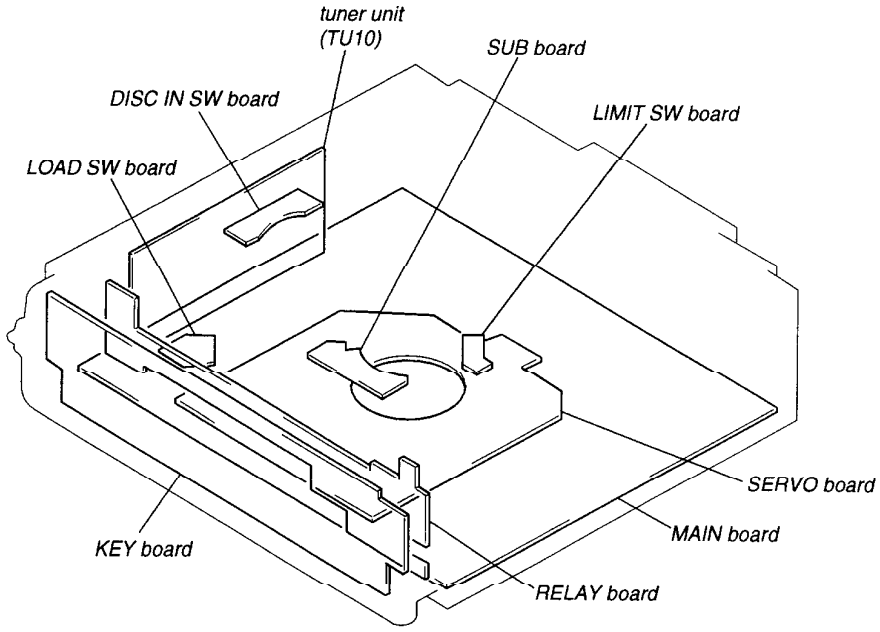
• IC501 MB90574PFV-G-123-BND (SYSTEM CONTROL) (MAIN BOARD)

Pin No.	Pin Name	I/O	Pin Description
1	$\overline{\text{SEKOUT}}$	O	SEEK OUT output
2	AF-SEEK	O	AF SEEK output (Not used in this set.)
3	WIDE	O	WIDE/NARROW select output
4	ST-MONO	I/O	Use a thing both as ST-IND display input and force MONO output.
5	TUNMUTE	O	Tuner mute output
6	FM-ON	O	FM ON output
7	TU-ON	O	Tuner ON output
8	VCC	—	Power supply pin (+5 V)
9	$\overline{\text{CSV-RST}}$	O	Audio composition IC reset output (Not used in this set.)
10	BUSON	O	Bus ON control output
11	$\overline{\text{SYSRST}}$	O	System reset output
12	$\overline{\text{DOORSW}}$	I	Door OPEN/CLOSE detection input
13	LCDSO	O	LCD serial data output
14	LCDCKO	O	LCD serial clock output
15	BEEP	O	BEEP output
16	LCDCE	O	LCD chip enable output
17	UNISI	O	Serial data input
18	UNISO	O	Serial data output
19	UNICKIO	I/O	Serial clock input/output
20	SD-IN	I	Signal detector input
21	CSV-SO	O	Audio composition serial data output (Not used in this set.)
22	CSV-CKO	O	Audio composition serial clock output (Not used in this set.)
23	CSV-CE	O	Audio composition chip enable output (Not used in this set.)
24	SIRCS	I	Remote commander input
25	PLLSI	I	PLL data input
26	PLLSO	O	PLL data output
27	PLLCKO	O	PLL clock output
28	PLLCE	O	PLL chip enable output
29	ILL-ON	O	Illumination power control output
30	DIMMER	I/O	Dimmer control input/output
31	TIRIND	O	TIR indicator control output (Not used in this set.)
32	$\overline{\text{LCDINH}}$	O	LCD blank display control output
33	VSS	—	GND
34	C	—	Power stabilization capacitor pin
35	$\overline{\text{AD-ON}}$	O	Power control output of A/D conversion.
36, 37	RE-IN0, 1	I	Rotary encoder input 0, 1
38	DVCC	—	D/A converter VREF input
39	DVSS	—	GND of D/A converter.
40	NCO	O	Not used.
41	LCDANG	O	LCD view angle alignment output
42	AVCC	—	Analog power supply pin (+5 V)
43	AVRH	—	A/D converter VREF+ input
44	AVRL	—	A/D converter VREF- input
45	AVSS	—	Analog GND
46, 47	KEYIN0, 1	I	Key input 0, 1
48	RC-IN0	I	Rotary commander input 0
49	DSTSEL0	I	Destination select input 0 (Fixed at "L" in this set.)
50	DSTSEL1	I	Destination select input 1 (Fixed at "L" in this set.)
51	DSTSEL2	I	Destination select input 2 (Fixed at "H" in this set.)
52	MTP	I	Tuner multi-pass input (Not used in this set.)
53	VSM	I	S-Meter voltage detection input
54	VCC	—	Power supply pin (+5 V)

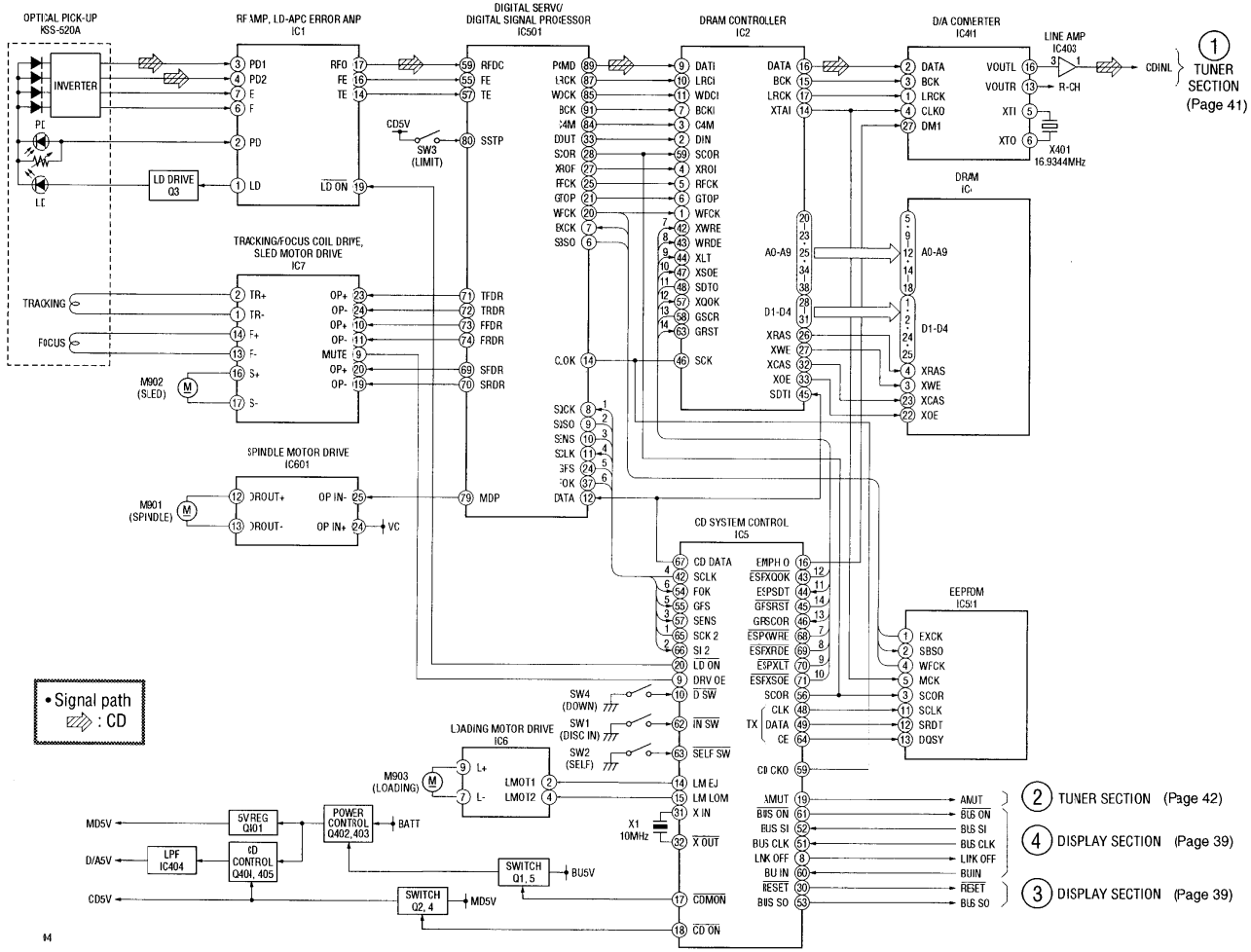
Pin No.	Pin Name	I/O	Pin Description
55	$\overline{\text{RAMBU}}$	I	RAM reset detection input
56	POWSEL	I	Power select initial setting input
57	$\overline{\text{EQ-SEL}}$	I	Equalizer connection with/without detection initial input
58	$\overline{\text{TESTIN}}$	I	Test mode setting detection input
59	DOORIND	O	Door indicator output
60	TIRPLAY	O	Audio line select control output at TIR playback. (Not used in this set.)
61, 62	SUB-SW1, 0	O	Simple SUB WOOFER control output 1, 0
63	VSS	—	GND
64	VOLCE	O	Electric volume serial chip enable output
65	MUTE	O	System mute control output
66	VOLSO/SUBSO	O	Main/Sub volume serial data output
67	VOLCKO/SUBCKO	O	Main/Sub volume serial clock output
68	SUBCE	O	Sub volume serial chip enable output
69	$\overline{\text{FLASH-W}}$	I	Flash write in mode detection input
70	I2CSIO	I	RDS serial data input
71	I2CCKO	I	RDS serial clock input
72	RC-IN1	I	Rotary commander input
73	X1A	—	Low speed oscillation input (32.768 kHz)
74	X0A	—	Low speed oscillation input (32.768 kHz)
75	DAVN	I	RDS IC data taking in detection input (Not used in this set.)
76	KEYACK	I	Key input acknowledge
77	BU-IN	I	Back-up power detection input
78	$\overline{\text{ILLIN}}$	I	Illumination line detection input
79	TELMUTE	I	Telephone mute detection input
80	$\overline{\text{NOSESW}}$	I	Front panel detachable detection input
81	$\overline{\text{ACCIN}}$	I	Accessory power detection input
82 – 85	TIR-D0 – D3	I/O	TIR IC command input/output 0 – 3 (Not used in this set.)
86	(VCC)	—	Connect to power supply pin.
87	(VSS)	—	Connect to GND.
88, 89	(VCC)	—	Connect to power supply pin.
90	$\overline{\text{RST}}$	—	Microcomputer reset input
91	VSS	—	GND
92	X0	—	High speed oscillation input (3.68 MHz)
93	X1	—	High speed oscillation input (3.68 MHz)
94	VCC	—	Power supply pin (+5 V)
95	TIR-BUSY	I	TIR IC BUSY output monitor pin (Not used in this set.)
96	TIR-WR	O	TIR IC data write in pulse output (Not used in this set.)
97, 98	TIR-CE	O	TIR IC chip enable output (Not used in this set.)
99	TIR-RES	O	TIR IC reset/power down output (Not used in this set.)
100	TIR-PDWN	O	TIR IC power down output (Not used in this set.)
101	TIR-RD	O	TIR IC data read in pulse output (Not used in this set.)
102	MTLIN	I	Auto METAL detection input (Not used in this set.)
103	AM STIN	I	AM stereo detection input (Not used in this set.)
104	REEL	I	Tape reel table rotation detection input (Not used in this set.)
105	POS0	I	Tape position detection input 0
106	POS1	I	Tape position detection input 1
107	POS2	I	Tape position detection input 2
108	POS3	I	Tape position detection input 3
109	LM-EJ	O	Tape loading motor control output (Eject direction) (Not used in this set.)
110	LM-LOD	O	Tape loading motor control output (Loading direction) (Not used in this set.)
111	CM-ON	O	Tape capstan motor control output (Not used in this set.)
112	TAPEON	O	Tape power control output (Not used in this set.)
113	N-ROUT	O	Tape forward/reverse detection output (Not used in this set.)

Pin No.	Pin Name	I/O	Pin Description
114	AMSON	O	Tape AMS control output (Not used in this set.)
115	DOLBC	I/O	Tape DOLBY B/C select control input/output (Not used in this set.)
116	DOLBY	I/O	Tape DOLBY control input/output (Not used in this set.)
117	CSV-NAR	I	Not used in this set.
118	LEDON	O	Front panel LED control output
119	VSS	—	GND
120	POWON	O	System power control output

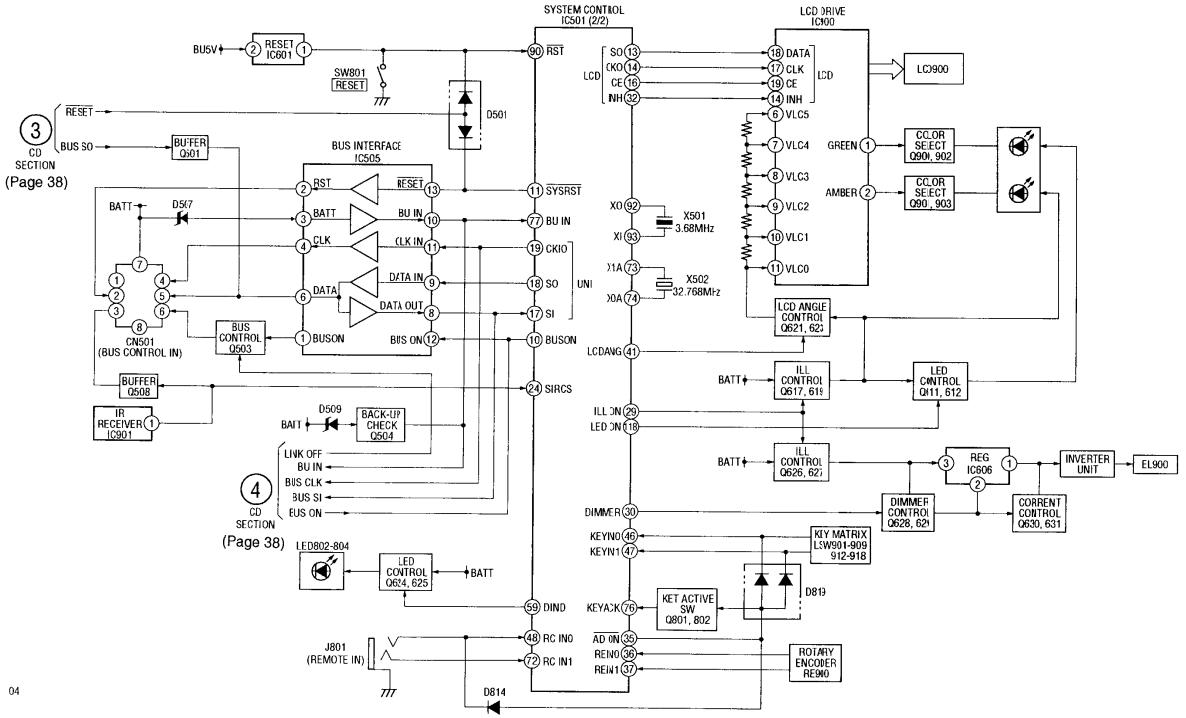
4-2. CIRCUIT BOARDS LOCATION



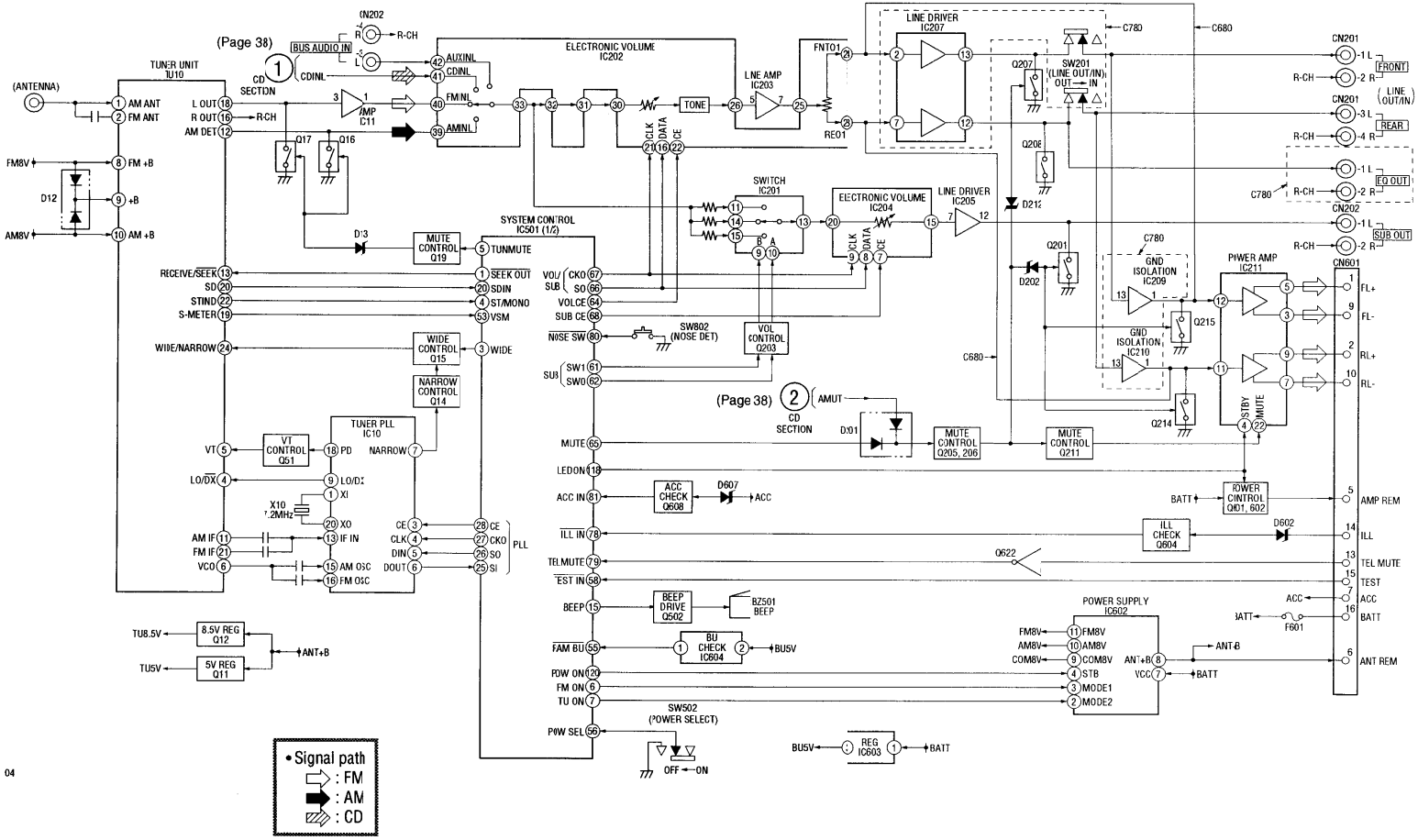
4-3. BLOCK DIAGRAM — CD SECTION —



4-4. BLOCK DIAGRAM — DISPLAY SECTION —

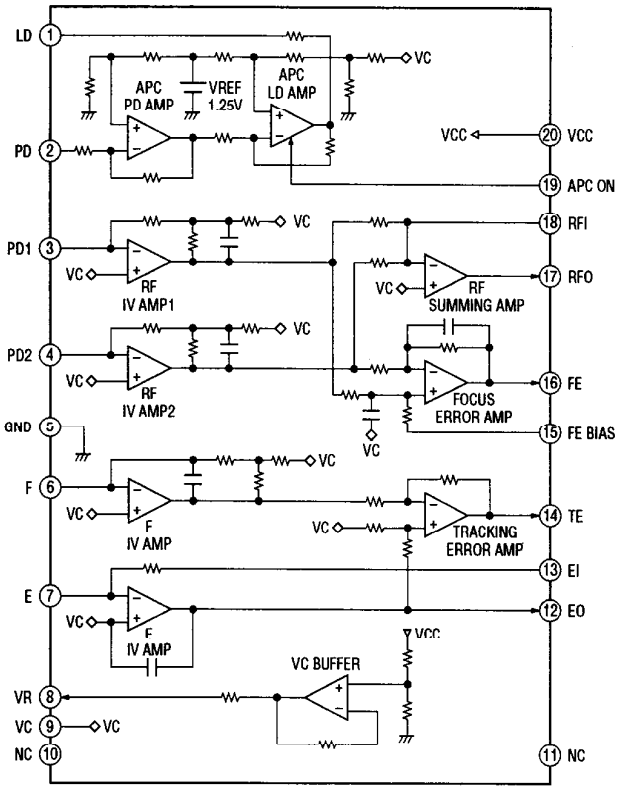


4-5. BLOCK DIAGRAM — TUNER SECTION —

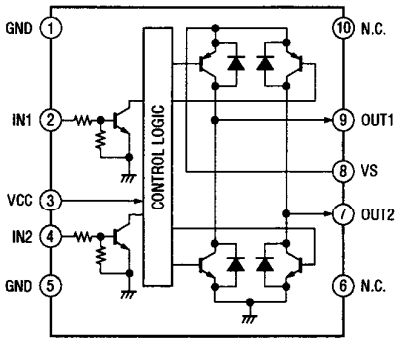


• **IC Block Diagrams**

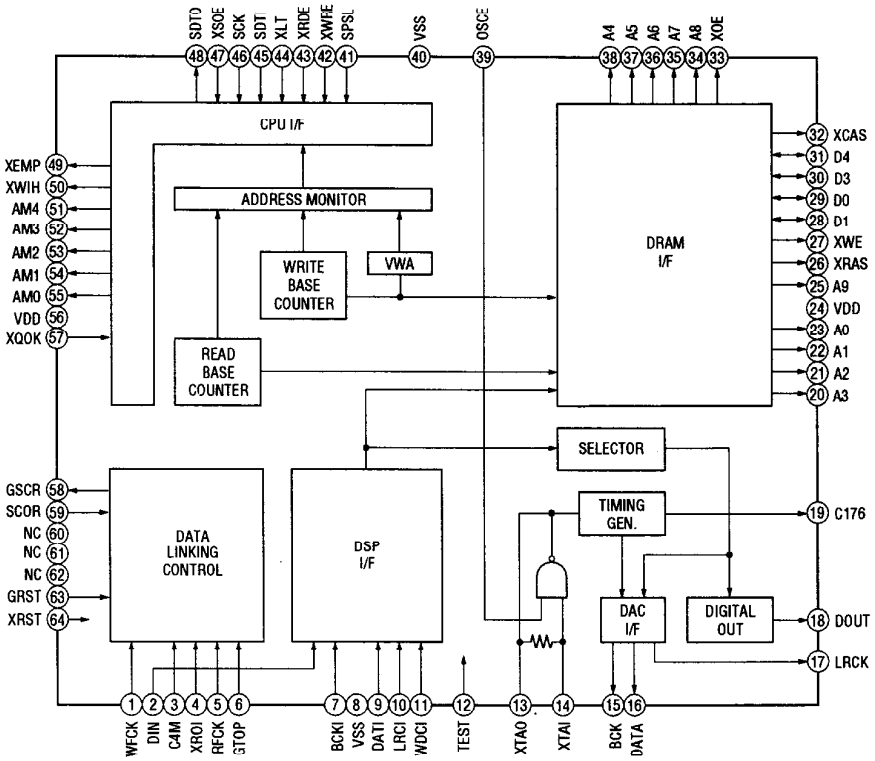
IC1 CXA1791N-T4



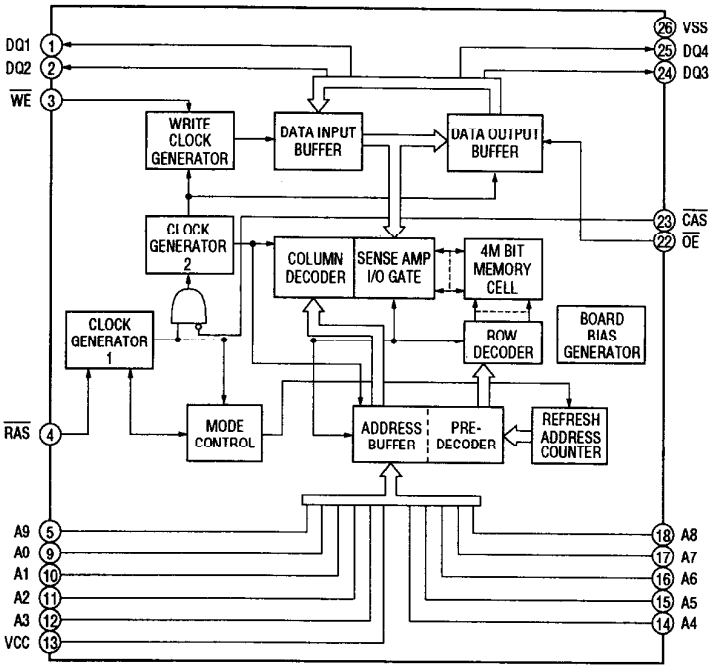
IC6 LB1638MTP-T1



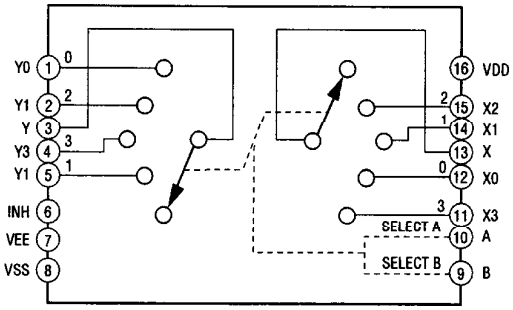
IC2 CXD2522R-T6



IC4 MB814400C-70PFTN



IC201 BU4052BCFV



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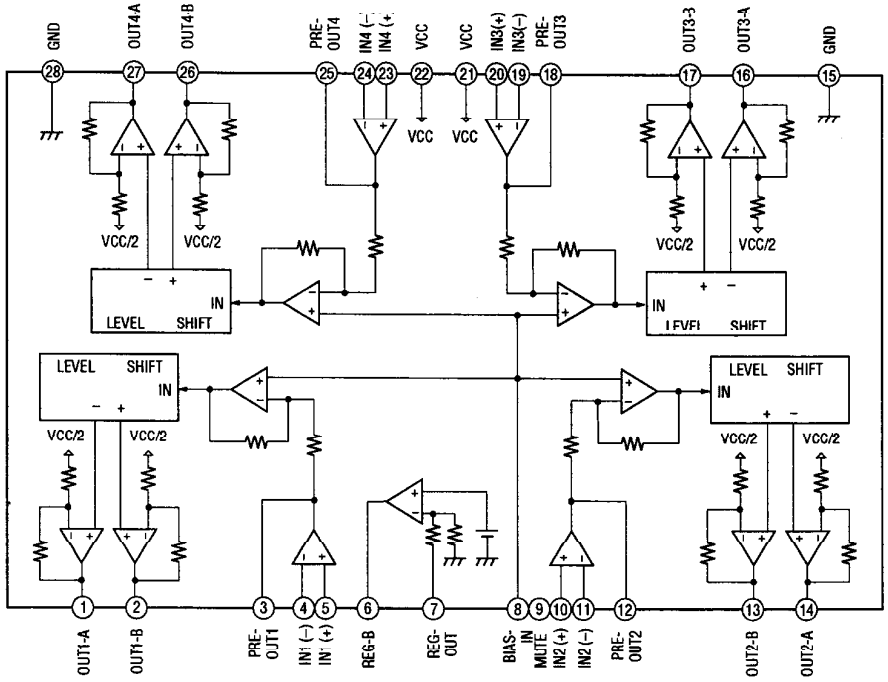
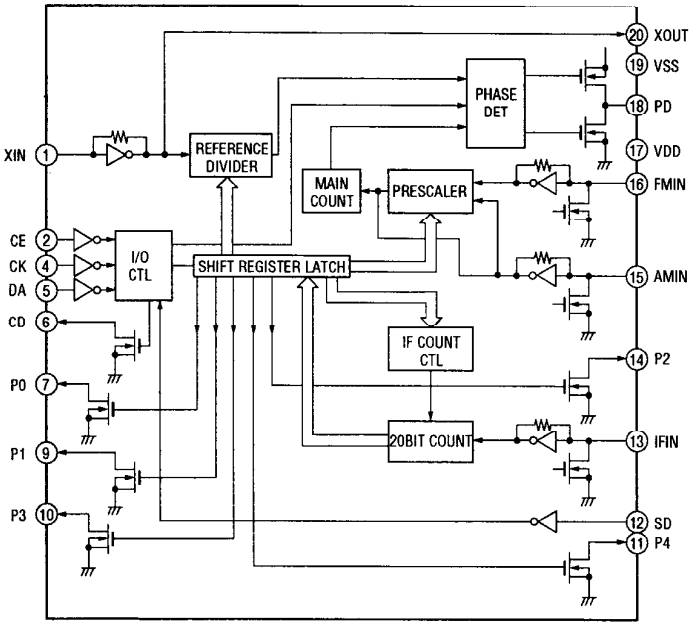
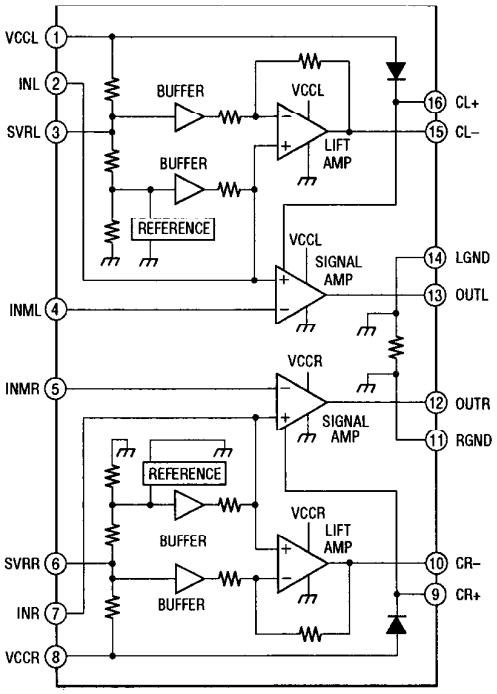


IC10 BU2624FV



IC205, 207, 208 TDA8574



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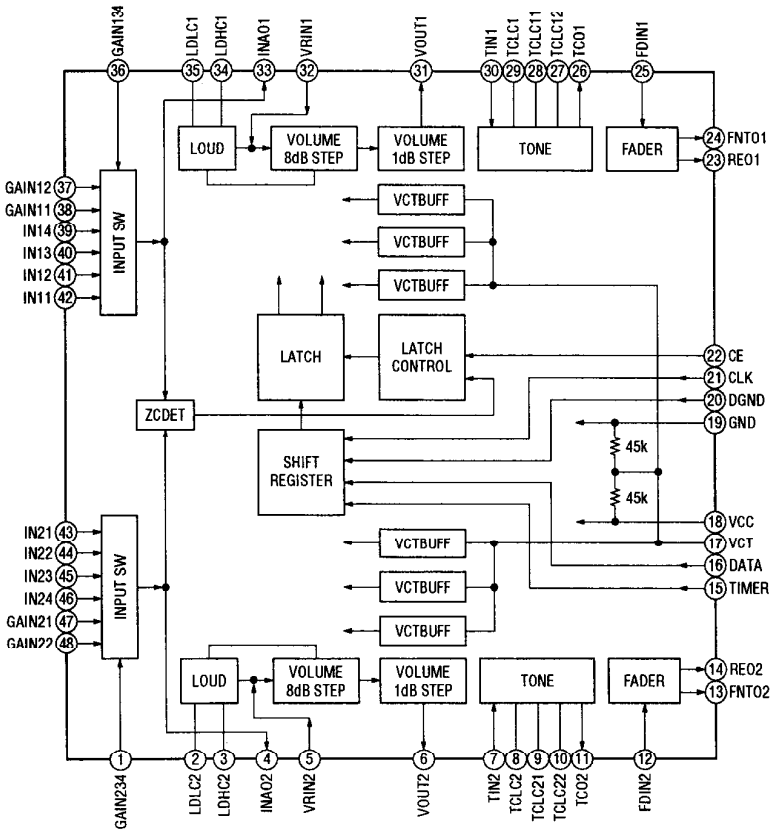
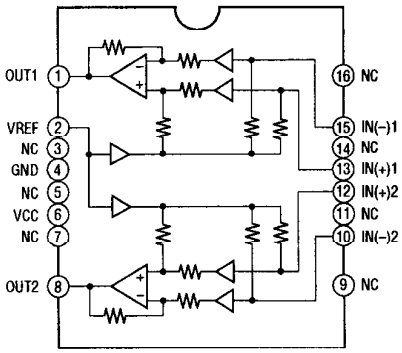
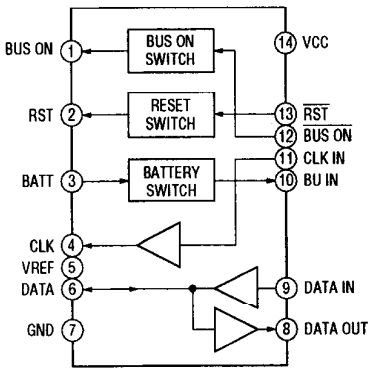


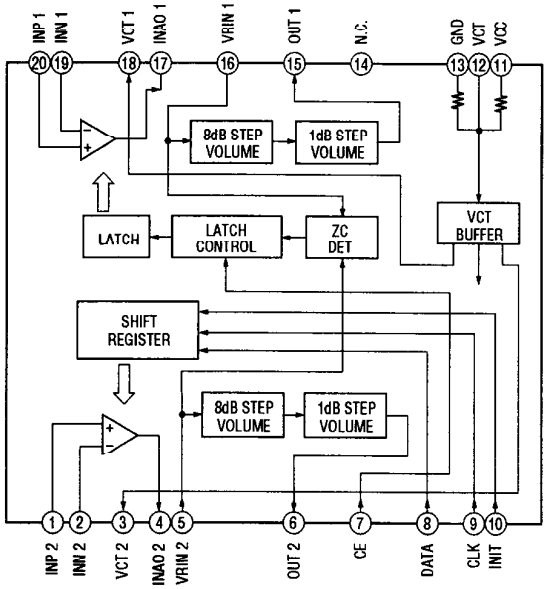
IC209, 210 TA2050F (EL)



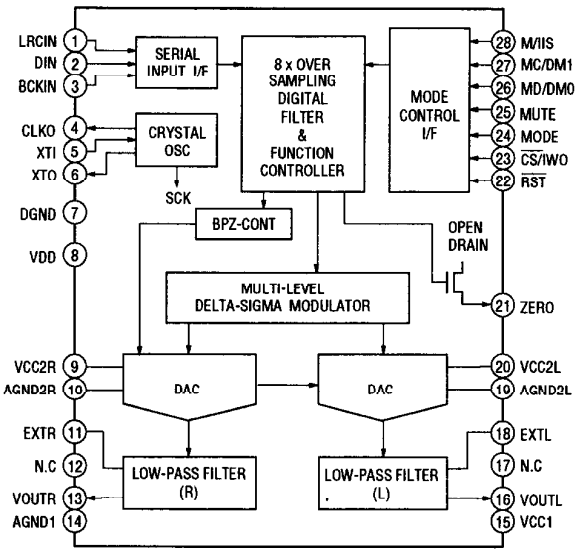
IC505 BA8270F



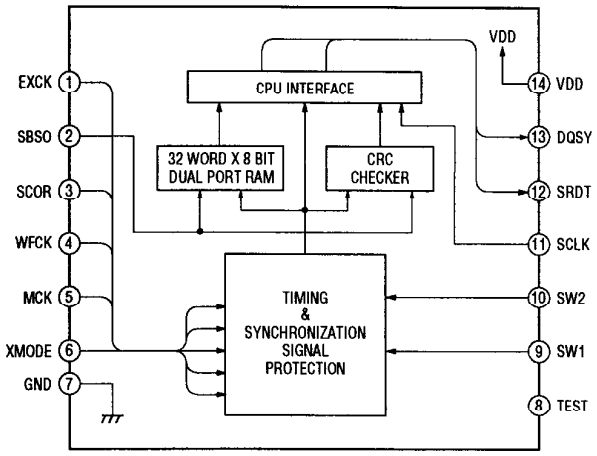
IC204 CXA1846N



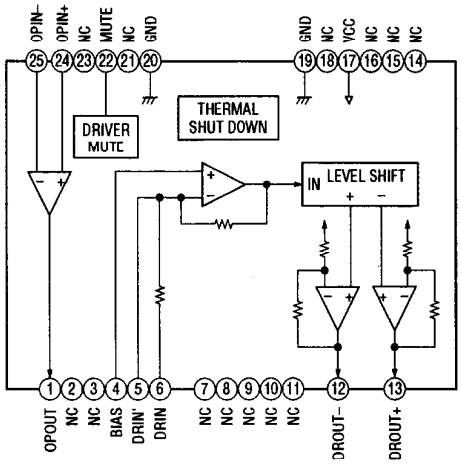
IC401 PCM1716E



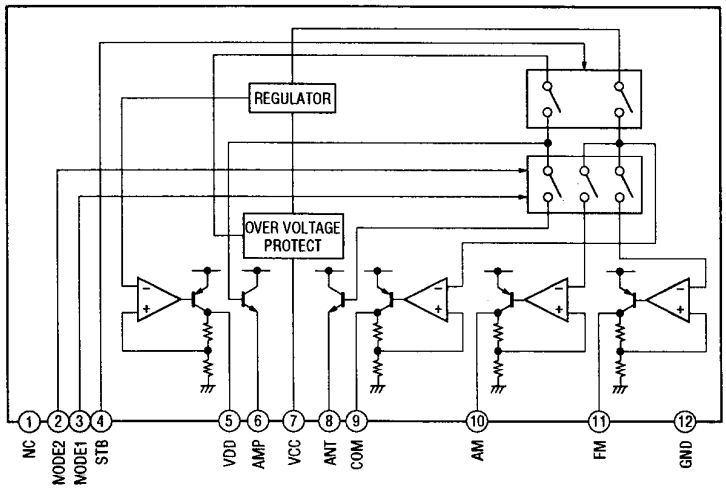
IC551 LC89170M-TLM



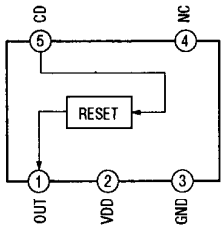
IC601 BA6195FP-YT2



IC602 BA3918-V3



IC604 RN5VD33AA



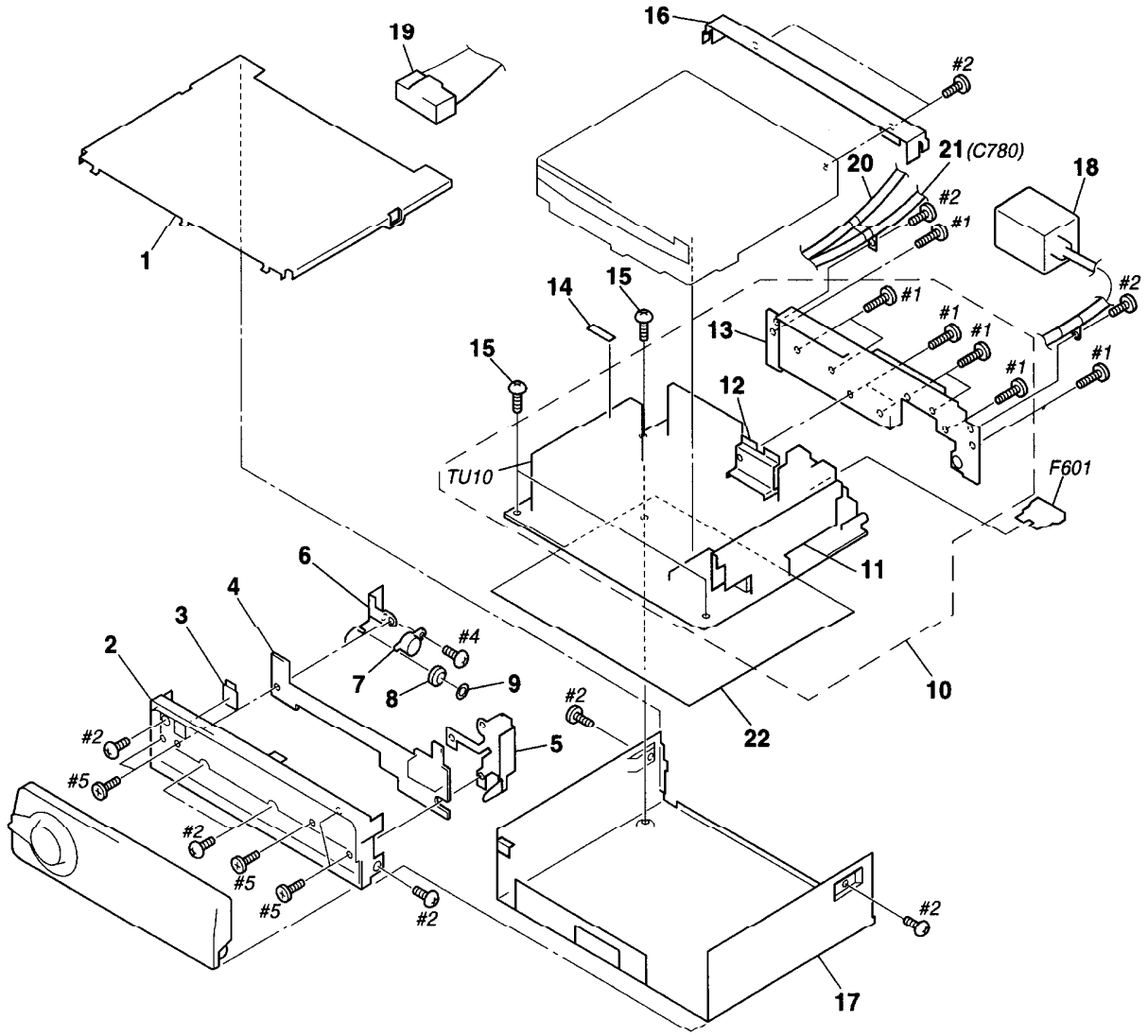
SECTION 5
EXPLODED VIEWS

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Accessories and packing materials and hardware (# mark) list are given in the last of this parts list.

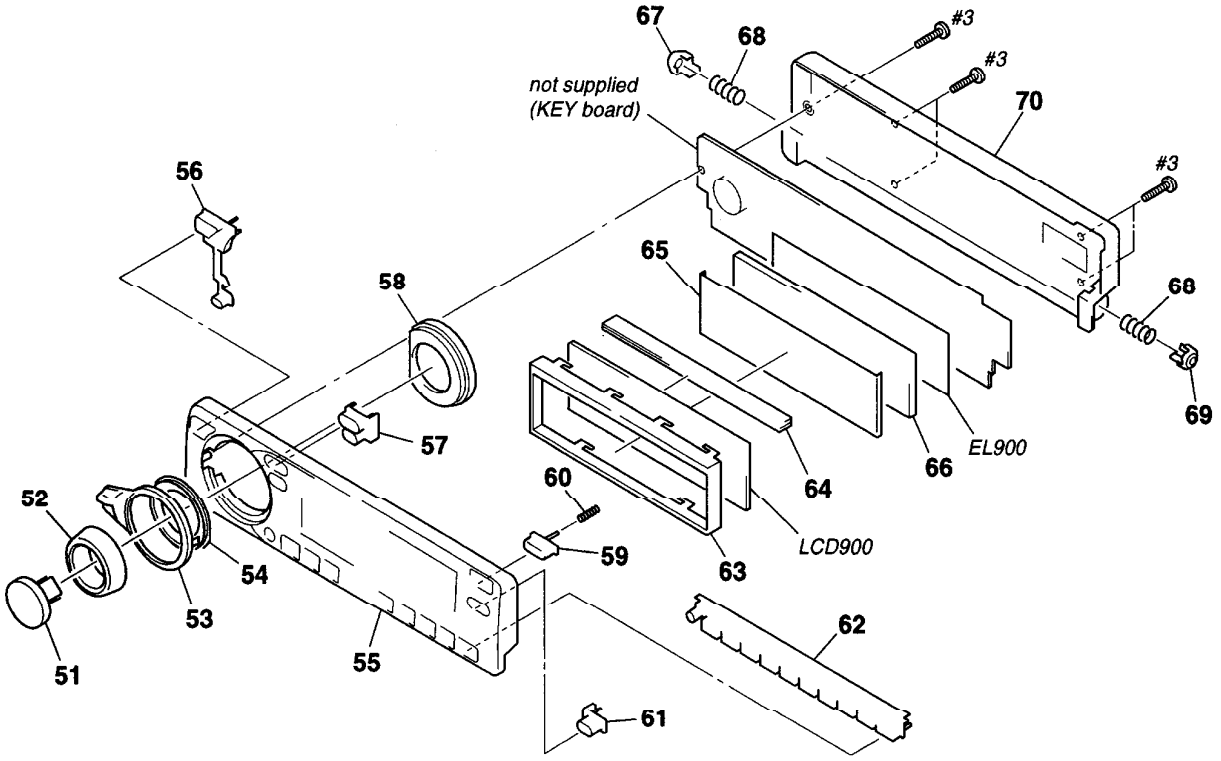
The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

5-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
* 1	3-022-316-11	COVER	
2	X-3375-069-1	PANEL ASSY, SUB	
3	3-022-338-01	BUTTON (EJECT)	
* 4	1-668-088-11	RELAY BOARD	
5	X-3375-068-1	LOCK ASSY	
6	X-3375-066-1	BRACKET (GEAR) ASSY	
7	3-953-235-01	DAMPER, OIL	
8	3-011-170-01	GEAR (HOLDER)	
9	3-341-752-11	WASHER, POLYETHYLENE	
* 10	A-3294-384-A	MAIN BOARD, COMPLETE (C780)	
* 10	A-3294-405-A	MAIN BOARD, COMPLETE (C680)	
* 11	3-014-819-01	HEAT SINK (REG2)	
* 12	3-022-317-01	BRACKET (AMP)	
* 13	3-022-336-01	HEAT SINK	
* 14	3-355-209-01	PLATE (B), GROUND	
15	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
* 16	3-022-335-01	BRACKET (MECHANISM DECK)	
* 17	3-022-311-01	CHASSIS	
18	1-475-684-11	INVERTER UNIT, EL	
19	1-776-207-71	CORD (WITH CONNECTOR) (POWER)	
20	1-777-246-11	CORD (WITH CONNECTOR) (ANTENNA)	
21	1-783-326-11	CORD (WITH CONNECTOR) (EQ OUT) (C780)	
22	3-023-539-01	SHEET (INSULATING)	
F601	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
TU10	A-3282-045-A	TUNER UNIT (TUX-012(E))	

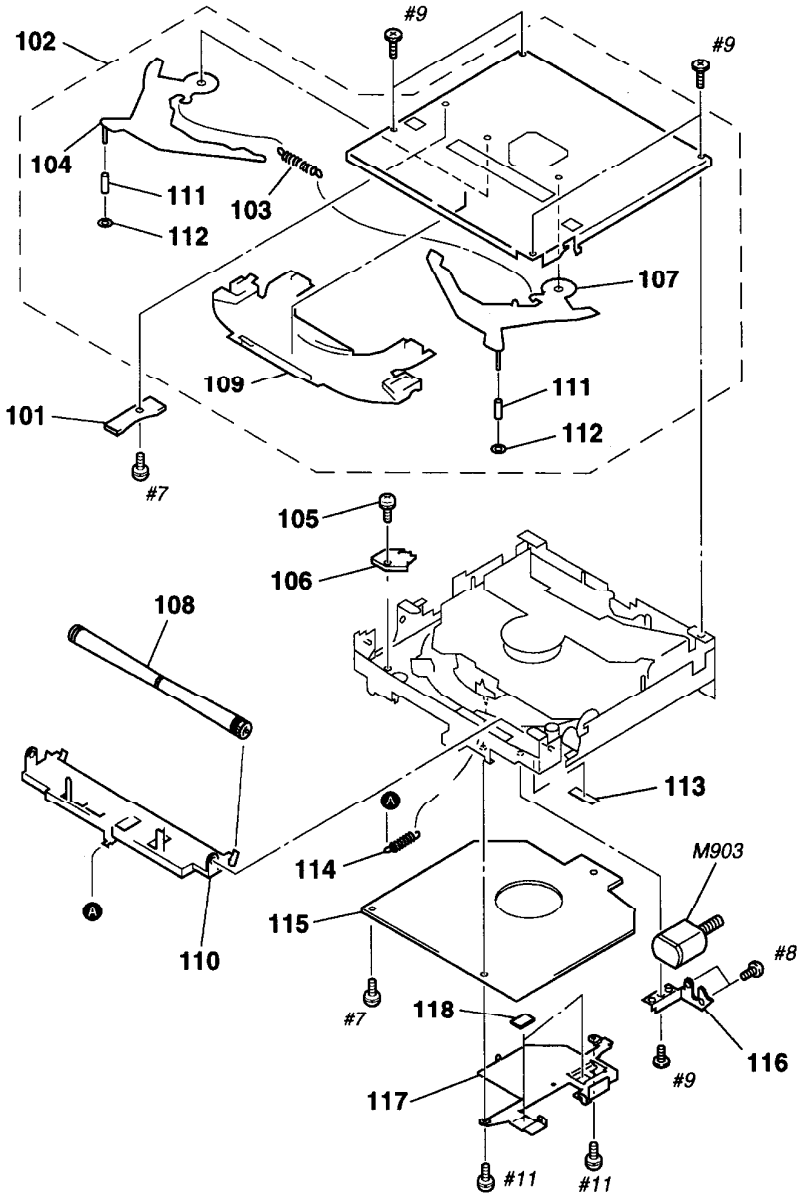
5-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-022-329-01	BUTTON (SOURCE)	
52	3-022-322-01	KNOB	
53	3-022-323-11	LEVER (SHUTTLE)	
54	3-022-325-01	PLATE (RING), LIGHT GUIDE	
55	X-3375-364-1	PANEL SUB ASSY, FRONT (C780)	
55	X-3375-365-1	PANEL SUB ASSY, FRONT (C680)	
56	3-022-330-11	BUTTON (MODE)	
57	3-022-331-01	BUTTON (SOUND)	
58	3-022-324-01	PLATE (SHUTTLE), LIGHT GUIDE	
59	3-022-333-01	BUTTON (OPEN)	
60	3-932-225-01	SPRING (OPEN)	
61	3-022-334-01	BUTTON (LIST)	

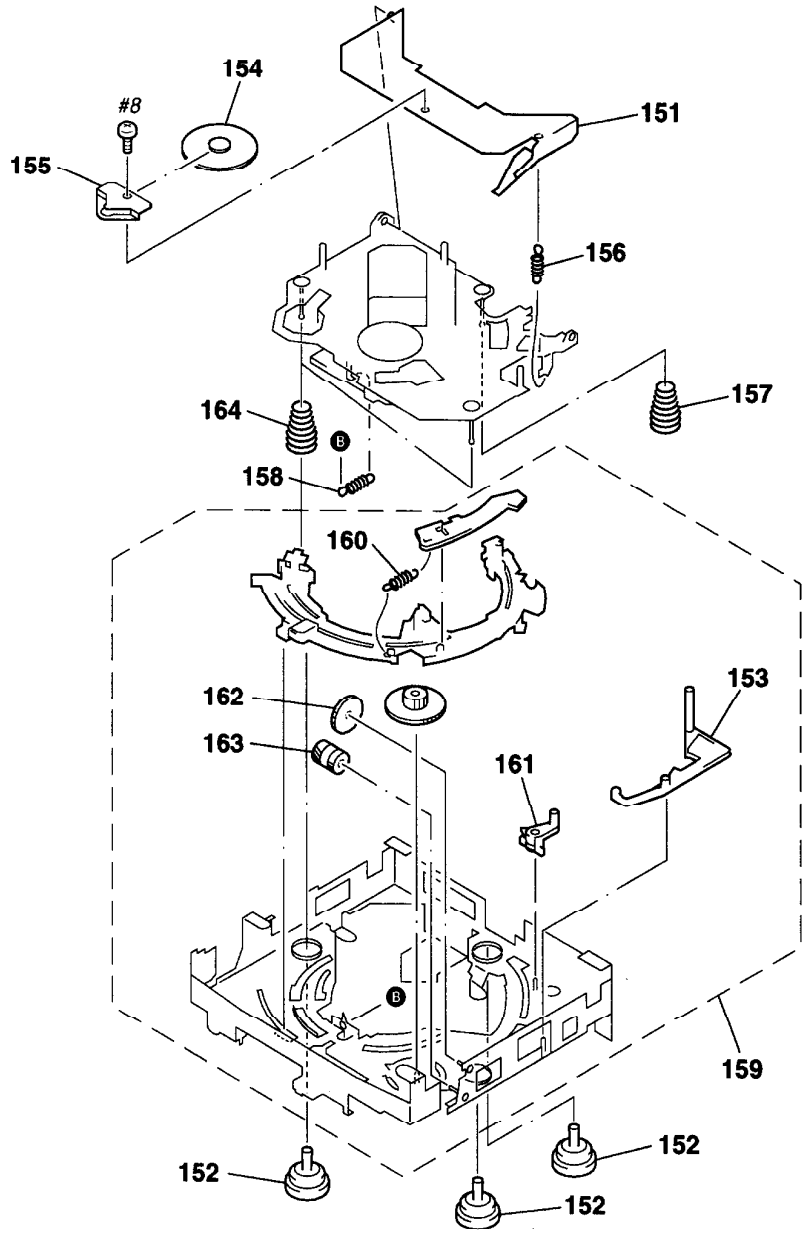
Ref. No.	Part No.	Description	Remark
62	3-022-332-01	BUTTON (10 KEY)	
* 63	3-022-327-01	PLATE (LCD), GROUND	
64	1-694-414-11	CONDUCTOR BOARD, CONNECTION	
* 65	3-022-328-01	ILLUMINATOR (LCD)	
* 66	3-022-326-01	PLATE (LCD), LIGHT GUIDE	
67	3-010-999-01	BEARING (L)	
68	3-010-998-01	SPRING (BEARING)	
69	3-011-000-01	BEARING (R)	
70	3-022-319-01	PANEL, FRONT BACK	
EL900	1-517-766-11	LIGHT, ELECTRO LUMINESCENT	
LCD900	1-803-107-11	DISPLAY PANEL, LIQUID CRYSTAL	

5-3. CD MECHANISM SECTION (1)
(MG-363S-121)



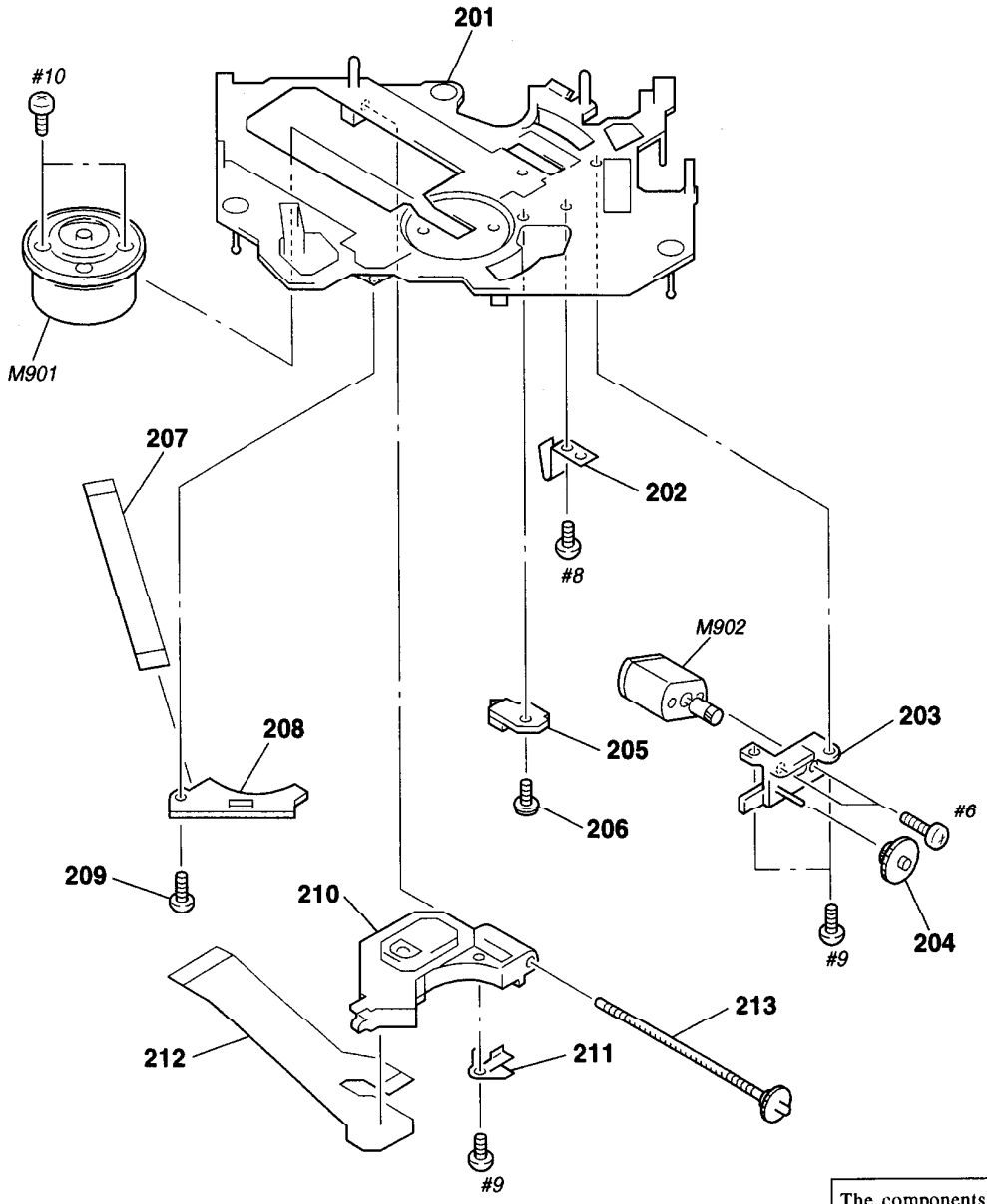
Ref. No.	Part No.	Description	Remark
* 101	1-659-836-11	DISC IN SW BOARD	
* 102	A-3291-816-B	CHASSIS (T) SUB ASSY	
103	3-931-909-01	SPRING (LR), TENSION	
104	X-3371-501-1	LEVER (L) ASSY	
105	3-338-737-01	SCREW (2X3), +PS	
* 106	1-659-837-11	LOAD SW BOARD	
107	X-3371-502-1	LEVER (R) ASSY	
108	A-3301-203-A	ROLLER ASSY	
109	3-931-908-01	GUIDE (DISC)	
110	3-931-902-03	ARM (ROLLER)	
111	3-936-756-01	ROLLER (D)	
112	3-321-393-01	WASHER, STOPPER	
* 113	3-939-139-01	SPACER	
114	3-931-916-01	SPRING (RA), TENSION	
* 115	A-3313-381-A	SERVO BOARD, COMPLETE	
* 116	3-007-530-01	BRACKET (MOTOR)	
117	3-023-537-01	HEAT SINK	
118	3-023-538-01	SHEET, RADIATION	
M903	A-3291-676-A	MOTOR SUB ASSY, LOADING	

5-4. CD MECHANISM SECTION (2)
(MG-363S-121)



Ref. No.	Part No.	Description	Remark
151	3-931-893-01	ARM, CHUCKING	
152	3-931-897-01	DAMPER (T)	
153	3-931-879-02	LEVER (D)	
* 154	3-913-404-11	RETAINER (DISC)	
155	3-931-894-01	BRACKET (CP)	
156	3-931-895-01	SPRING (CH), TENSION	
157	3-931-898-01	SPRING (FL), COMPRESSION	
158	3-931-914-01	SPRING (ANGLE), TENSION	
* 159	A-3291-677-G	CHASSIS (M) ASSY	
160	3-931-883-01	SPRING (TR), TENSION	
161	3-931-881-01	LEVER (LOCK)	
162	3-931-882-02	GEAR (MDL)	
163	3-007-537-01	WHEEL (U), WORM	
164	3-931-898-11	SPRING (FL), COMPRESSION	

5-5. CD MECHANISM SECTION (3)
(MG-363S-121)



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 201	X-3374-022-1	CHASSIS (OP) (O/S) ASSY	
202	3-931-829-01	SPRING (SL). PLATE	
203	X-3371-504-1	BASE (DRIVING) ASSY	
204	3-931-832-01	GEAR (SL MIDWAY)	
* 205	1-659-835-12	LIMIT SW BOARD	
206	3-338-737-01	SCREW (2X3), +PS	
207	1-659-880-11	MOTOR FLEXIBLE BOARD	
* 208	1-659-834-11	SUB BOARD	
209	3-909-607-01	SCREW	
⚠210	8-848-402-02	PICK-UP, OPTICAL KSS-520A/J2NP	
211	3-931-834-01	SPRING (FEED), PLATE	
212	1-659-881-11	PICK-UP FLEXIBLE BOARD	
213	A-3291-669-A	SHAFT (FEED) ASSY	
M901	X-3373-096-1	MOTOR ASSY (SPINDLE)	
M902	A-3301-107-A	MOTOR ASSY, SLED	